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Civil Engineers – Politics and Leadership

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This Lecture questions why so few Civil Engineers in the United Kingdom rise to the highest levels of leadership in business and specifically in public office, including serving their country in Parliament.

The development of Civil Engineers to lead construction businesses is important. Developing Civil Engineers to be political leaders is crucial. This nation needs their knowledge, skills and experience for making the all important decisions for managing and developing our country's infrastructure for future generations. This being necessary at a time when our nation faces significant challenges resulting from the effects of the continuing unpredictable weather conditions we are facing, the need to live within a sustainable low carbon environment and the economic challenges of operating in a highly competitive international market place.

A Noble Profession

Civil Engineering is a noble profession that has its place at the same high table as the professions of Law, Medicine and Architecture – the professions that are amongst those that have the most profound effect on the social well-being of the people of the United Kingdom. If however, any ten people chosen at random in this country were asked to describe the role of the Civil Engineer, no more than two

would know. Yet the work of the Civil Engineer will become more essential to the life of everyone as time moves on.

Tredgold (1), a craftsman Civil Engineer from the early Victorian period, defined civil engineering as:

“..the art of directing the great sources of power in Nature for the use and convenience of man”.

More recently the Council of the Institution of Civil Engineers has approved a revised definition which includes the words of Tredgold but additionally states that civil engineering must *“develop the people needed to create and maintain a sustainable natural and built environment”* and also civil engineering *“requires research, team working, leadership and business skills.”*

Architects and Builders provide people with the buildings needed to live in, work in, study in, get well in, and be entertained in, whereas Civil Engineers provides these buildings with the essential services that truly make them “civilised”. Civil Engineers provide clean water and contribute to providing energy to buildings, manage commercial, industrial, domestic and human waste, provide drainage and flood alleviation systems, and produce a means of communication between communities – roads, bridges, railways, airports, sea ports, rivers and canals. All these activities are undertaken by Civil Engineers within the context of such social, economic and political needs and limitations as:

- environmental legislation;
- the future need for a sustainable low carbon society;
- economic growth;

- funding and budgetary controls and caps.

Carmichael (2), in a Paper published in 1979, "The Nature of Civil Engineering as a Profession", attempted to define the Civil Engineers role and responsibilities to society. He argued that engineering products have a significant influence on all human living conditions and therefore such products should not be judged solely on engineering criteria. He stated that: "*The total criteria must be a balance between the practical objectives and the wider ranging social benefits. Thus the Engineer has two Clients, the immediate paying Client and trustful society*". The social responsibilities therefore, that society requires Civil Engineers to bear, as a part of their professional role, are thus well defined by Carmichael.

Civil Engineers as Leaders

It is clear then that the Civil Engineer has a role in caring for the paying Client but also a key responsibility to society at large. Engineering decisions made by Civil Engineers undoubtedly have significant consequences for all parts of society. It would be expected therefore, that United Kingdom Civil Engineers would find themselves playing key roles in the political and business decisions of this Country – indeed the Institution of Civil Engineers definition of Civil Engineering refers to the need for Civil Engineers to have "*leadership and business skills*". The fact remains however, that UK Civil Engineers have little political and business influence. They are barely to be found in Parliament or in any major public office and are only occasionally found to be the business leaders of our major civil engineering consultancies, contractors and major utility supply companies.

In business it appears that only two of the managing directors leading the top ten civil engineering consultancies operating in this country are professionally trained

Civil Engineers and it is the same number for civil engineering contractors (3). Amongst the English and Welsh Water Companies there is only one Civil Engineer in the main leadership role. Additionally the Public Affairs Executive of the Institution of Civil Engineers is unaware of any Civil Engineers who were elected Members of the last Parliament. Thus as a general statement it must be concluded that the profession is barely producing Civil Engineers with the abilities needed for top leadership in either business or politics.

When British Government Ministers sit down to decide how to cut the “spending cake”, between the requirements of Education, Health, Defence and the like, there is no Civil Engineer at the “top table” quantifying and advocating the need for spending on the environment, infrastructure and transport - all these being key elements of a civilised society which do not appear to be joined up at government level. It is not surprising that Michael Portillo (4), who is a political commentator and not a Civil Engineer, has recently been quoted as saying that *“The British are very timid about infrastructure investment”*

In 1987, in his Inaugural Professorial Lecture as the new Professor of Construction Management at Loughborough University, Professor Ron McCaffer (5) expressed concern as to the highly specialist nature of undergraduate teaching at British Universities. His Paper argued then that teaching concentrated too much on the design process and inadequately on the production processes.

McCaffer quoted numerous construction leaders in support of his case including K J Hayzelden, the then Group Training Officer of R M Douglas, who posed the question:

“Would it be better to recruit arts graduates as potential managers and leave the graduate civil engineers to be engineers? Most of them appear just to want to be engineers – they seem to feel that one becomes a manager only when one is in ones’ dotage”.

In the same Paper McCaffer quoted H M Bedelian, the then Managing Director of Balfour Beatty Construction, reporting that the civil engineering graduates recruited during the mid-seventies had not come to prominence in his Company Management Structures by 1987.

The problem seems to be that the very bright civil engineering undergraduates are pushed down the advanced technical route and the less academically bright end up doing “management topics”. The industry thus loses its cleverest potential “star” leaders.

Rethinking Construction- The Egan Report (6), published in 1998, also identified the problem of the shortage of senior management in the construction industry who have the *“right balance of technical and leadership skills to manage their businesses accordingly”.*

In October last year the Constructing Excellence Organisation produced a Report titled “Never Waste a Good Crisis” (7), which yet again stressed the need for the construction industry as a whole to produce good leaders. The Report stated that *“We must develop a new generation of leaders who can communicate their vision and drive change in culture and behaviours. We need leaders who can help the*

public understand our contribution to a successful society and economy and help to attract more of the best recruits to our industry”.

The fact that this most recent Report is still reinforcing the need for leaders with good leadership skills can only emphasise the urgent requirement that the construction industry still has for the recruitment and development of people with these skills. Clearly, based upon present outcomes, the calls that came from the industry back in the seventies, eighties and the nineties, that the industry should work to develop leaders and leadership skills in its people, has not yet been fully answered either by our Universities, the Design and Construction Professions or Employers.

The Egan and Constructing Excellence Reports however, have applied themselves to the construction industry as a whole and only to the leadership challenges within the industry. The civil engineering industry is a major part of the construction industry and thus must take its share of the blame for failing to produce the needed leaders. It is however, the civil engineering sector of the construction industry that has the greatest role to play in tackling the future challenges of a changing climate and society's environmental and sustainability needs. If the civil engineering industry cannot produce the necessary industry leaders then it is not surprising that it is also failing to produce the country's political leaders. The profession is therefore letting this country down when civil engineering leadership is so clearly needed, both in industry and politics.

Leadership at the “Top Table”

The failure of the industry to produce “top table” civil engineering leaders is due to:

- a failure to convey to society at large the crucial importance to society's future well-being of the work of the construction industry, and specifically the civil engineering industry;
- a failure to show that working in the industry is an attractive and important career choice for young people.
- A failure to attract and recruit quality individuals into the industry;
- A failure to develop individuals with the education, skills, belief and vision to be leaders.

The Constructing Excellence Report (7) covers the first point when it states *"We also need industry bodies and professional associations to cooperate better to represent our industry effectively to Government and the public"*. The Report is correct on this but where is the response?

The Report is correct on the need for the development of men and women to be leaders of the construction industry. It does not however, capture one of the key failures of the industry, which is in it does not produce construction professionals, specifically Civil Engineers, capable and motivated enough to pursue "top table" positions in politics. The Report refers to the lack of joined-up thinking by Government and the construction industry about how the built environment contributes to the UK's long-term prosperity. The Report does not appear to identify though that many of the issues it raises will simply not be resolved until we have construction people operating at a political level. More specifically they will not be solved until Civil Engineers are developed, not only to be leaders of industry, but also with a broader understanding of the political issues affecting their work and the confidence to take to the political stage and lead on such issues.

The Report also makes a telling point about how little the Government perceives the importance of the construction industry. It makes reference to the fact that in the last Cabinet reshuffle the Prime Minister appointed the ninth Construction Minister in as many years, as well as the ninth Housing Minister in the same period. This is too high a turnover of Ministers to achieve any kind of consistent and meaningful link with such an important national industry. When it comes to managing the economy however, or putting right their economic mistakes, all governments appear happy to use the public sector civil engineering industry as their economic football.

The Government also appears to have failed in “joining up” the essential ministerial roles that come under the banner of civil engineering. At present such responsibilities appear to be spread across four Secretaries of State and one Minister of State all leading separate Ministries. For our industry to be taken seriously we need a Civil Engineer at the “top table”.

The recent appointment (8) of a Chief Construction Adviser to the Government must be applauded but the role is purely advisory and the new Advisor is a Quantity Surveyor. Quantity Surveyors have an essential role in supporting Architects, Builders, Developers and Property Professionals. They are the essential accountants of the building industry but it must be questioned as to how far their responsibility to trustful society as a whole goes.

Only when Civil Engineers begin to lift their heads above their computers and understand the need to see their role not only as technicians and engineering project

managers but also as political leaders, will the political failures highlighted in the Constructing Excellence Report be addressed.

Field Marshall Lord Slim, in an Address to the Royal Military Academy Sandhurst on 14th October, 1953, listed the key qualities of a leader as – Courage, Willpower, Initiative and Knowledge. Few Civil Engineers are without these attributes so they have nothing to fear from industrial and political leadership except fear itself.

A Unique Political Problem

Politically it appears that the problem of Civil Engineers failing to involve themselves in politics is almost unique to the United Kingdom. Many significant political leaders from other nations have worked as Civil Engineers before taking up a career in politics. Included in this list are Boris Yeltsin (President of Russia 1991-1999), Hu Jintao (President of China 2003 -), Mahmoud Ahmadinejad (President of Iran 2005 -) and Kanuri Rao (Indian Government Minister for Irrigation and Electricity 1963–1973). Amongst the biographies of American Politicians who have served their country over the last century, including as Presidents, are over two hundred who are listed as having an engineering background – many of whom were Civil Engineers.

When Barak Obama recently met the President of China, The Economist (9) reported it as a meeting not of different cultures but of different professions when it stated *“When Barack Obama met Hu Jintao, his Chinese counterpart, at the G20 summit in London, it was an encounter not just between two presidents, but also between two professions and mindsets. A lawyer, trained to argue from first principles and haggle over words, was speaking to an engineer, who knew how to*

build physical structures and keep them intact...". It is clear though that from the speech made by the President of China at that G20 summit that he knows how to communicate using words as well as just numbers.

The great emerging nations, such as Russia, China and India, are all well served at the political "top table" by politicians who first trained as Civil Engineers – this country is not so served.

It is arguable however, that we as a nation have a highly developed infrastructure and thus no longer need civil engineering skills applied at a political level, only at a technical level. Whereas those emerging nations still developing their infrastructures still require the skills of a Civil Engineer at a political level making political decisions. It has also been argued that the wealth of this nation was made before the First World War by our Merchant Venturers, Bankers, Commodity Brokers and City Traders, all advised by lawyers, creating the invisible earnings that balanced the UK's visible trade deficits. Thus the establishment classes in the UK, aware that power is achieved through wealth and seeking to have and hold power through such wealth making activities, educated, trained and directed their offspring to take on such non-engineering service orientated roles. Civil engineering was only of secondary importance to the wealth of the nation and thus was seen in the UK as a second class profession. As a second class profession Civil Engineers lacked the confidence needed to aspire to be political leaders. The profession in other countries had no such failure of confidence.

These arguments may have been valid once but are now not applicable and should have no value today. The challenges facing the United Kingdom, across the whole

spectrum of civil engineering issues, remain significant. Many of these challenges are new and associated with our changing climate, energy preservation, sustainability and transport issues. Many are existing challenges and are associated very much with an ageing, failing and unjoined-up infrastructure. If Civil Engineers are not there at the forefront of political decision making then “*trustful society*” will suffer and other nations, with Civil Engineers at the “top table”, will simply pass us by both socially and economically. It will leave us as a once great nation that has lost its way.

The Challenge

The challenge is clear – how does the world of civil engineering in the United Kingdom recruit and develop Civil Engineers to be both leaders of industry and political leaders? How does the industry improve its image by better informing the public of the crucial importance of investment in this country’s infrastructure for the welfare and economic well-being of its people? The public understand the importance of the likes of education, health and defence but not of this nation’s infrastructure needs. It is hoped however, that the prevailing public perception that the UK’s infrastructure can be taken for granted, may well change. The recent flooding and loss of key bridges in Cumbria for example, and the effect of this on that Regions economy, is just one indication of the need to manage the consequences of our changing weather conditions and the effect that infrastructure failures do and will have on the UK Economy. The public needs to catch on to this now pretty quickly.

Our industry is caught in a “chicken and egg” predicament – it can only recruit the best if it can get the message out of how crucial civil engineering is for the public good. It can only get that message out if it has recruited young stars with the ability

to communicate to the public both verbally and using the written word. Engineers do numbers not communication – this must change and the change first needs to be driven by University Departments encouraged and supported by industry and the Professional Institutions.

The Constructing Excellence Report sums the situation up well by stating *“There are many reasons why construction has a low public profile. In a low margin, competitive industry, public relations tends to focus on investor relations or supporting the sales effort. Industry leaders do not seek a wider publicity due to an instinctive risk aversion, based on the common perception that the national media are only interested in things that go wrong, such as Wembley Stadium or the T5 opening. Such a narrow, defensive media strategy will not help influence public policy or educate the public about our vital contribution to UK plc. Nor will it help recruit tomorrow’s brightest graduates. Attracting and developing a sufficient proportion of the right calibre of graduates has long been a major challenge for our industry. Again the Report should also have said that another major challenge was the need to attract construction trained professionals to lead at a public service and political level. Only when we have Engineers in such roles can Civil Engineers make a difference.*

When faced with the dreaded “chicken and egg” dilemma then action must begin somewhere in that circle. Most importantly action must be taken to educate the public as to the political necessity of having a reasonably balanced representation of Civil Engineers both in Parliament and at a political level in this country’s Town Halls.

Change must begin first within our Universities with support from our Professional Institutions, by:

- having a planned programme of educating young school leavers and potential recruits, including targeting our best state and public schools, as to what civil engineering is and its importance to the social and economic well being of society;
- teaching undergraduates the basics of law, business and people management and educate and inspire our undergraduates to be leaders, and to see themselves in a “bigger picture” than they do now, in addition to being just technicians and advisers;
- placing the work of the Civil Engineer in undergraduate degree programmes into a clear historical, social and political context and encouraging the brightest graduates along the management and leadership route as an equal option to the technical route;
- making certain that all civil engineering students graduate with the ability to communicate and present both verbally and using the written form.

Hopefully such seeds will grow and make a difference.

Few Civil Engineering Degree Courses cover the last two objectives and University Departments need to respond. Indeed many Civil Engineers only come to make their

first verbal presentation on their work at their Professional Interviews for Chartership. This being done when they are at an age when many lawyers, for example, are making their first run for Parliament.

University teaching can begin the required improvements and create the culture change needed, but industry has been bemoaning its lost generation of leaders for too long without truly having a positive measurable action plan to address the problem. This must change and such a plan must be developed and led by the Institution of Civil Engineers through their Council and Regional Organisations. The Plan must address as one of its key objectives the problem of not having any Civil Engineers in a position of political power. Achieving a fair balance of Civil Engineers elected to Parliament, and developing Engineers with an understanding of politics and the skills to deliver an opinion, has to be a worthy aim. The achievement of such should have the consequent effect of “dragging along and up” the quality of Civil Engineers as public service and business leaders, who also must be politically aware if they are to be successful in such roles.

The Institution of Civil Engineers should not be concerned or unduly modest about having its members pursuing political power for the good of society. That must be a laudable aim of any learned body. Lawyers have no such misgivings as the portraits of lawyers who became Prime Ministers proudly adorn the walls of the Inner Temple in London for all to see. There exists no undue modesty amongst the legal professions about their members who have made it to the top of the very “top table”.

Conclusion

In conclusion University Departments, the Institution of Civil Engineers and the civil engineering industry must begin to work as one to see that Civil Engineers are developed not just to be brilliant technicians but also to be politically aware. They must be developed with the education, skills, confidence and vision to aspire to be elected to the political bodies of this country and to lead our great commercial enterprises. Failure to do so will result in yet another Industry Report within the next ten years advocating yet again the need for better leadership. If there continues to be a failure to respond to this challenge, due to fear or complacency or acceptance of the status quo, then the profession of civil engineering, in the minds of the people of this country, will continue to be ranked as just second class and finally the very well-being of the people of this country will be the worse for that.

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