COLLABORATION AND CAPITAL PROJECTS – THE HONDA EXPERIENCE CASE STUDY - CONSTRUCTION OF NEW EUROPEAN CAR PLANT AT SWINDON FOR HONDA OF THE UK (MANUFACTURING) LTD

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1 Synopsis

1.1 Background

1.1.1 There are many sources of information including external audit reports and government inquiries on "failed" capital projects. In recent history the Scottish Parliamentary Building (Holyrood House) increased in cost from £10m to £374m. In contrast this paper looks at how the prospect for successful capital projects can be improved by considering as a case study[1] the construction of Honda's European Car Plant in Swindon, Wiltshire.

1.1.2 Honda is one of a growing number of Client organisations, which successfully uses so called "sophisticated" project management tools and techniques. The end result is a number of projects, which have beaten tight financial constraints; and have been delivered on time to the required quality. Indeed Honda's internal benchmarking has shown that construction costs on many European projects are comparable with those in the competitive USA market.

1.1.3 In October 2002 the New European Plant at Honda was awarded the British Construction Industry Award for a Building Project. The judges for the British Construction Industry Award[2] commented:

[1] "Insights from beyond construction" a paper presented to the Society of Construction Law (www.scl.org.uk) by Richard Bayfield and Paul Roberts September 2004
[2] www.bciawards.org.uk

1.1.4 "*Honda sought to establish an integrated team approach at all stages of the project. Indeed Honda was aware that the only way the project would be successful is if everyone bought into the "one team one goal" philosophy. The management of the project was structured to provide both flexibility to the Client and a "non-adversarial" climate. There were innovative and proactive methods used to achieve this "team culture" which ranged from the use of fair contracts with "early warning" procedures to the use of smart boards at meetings to ensure high visibility and no hidden agendas. In summary, Honda has achieved a 40% improvement in its UK construction performance over 11 years (as measured by building cost for buildings of equivalent functionality).*"

1.1.5 What is more important is that this improvement has not been at the cost of cutting building functionality, nor has it been at the cost of Contractor (Supplier) margins. Honda recognises that the only way it can survive long term is through its Suppliers being profitable. In Honda's case this improvement has largely been achieved by using the best available management tools and techniques coupled with a company philosophy, which actively encourages change and challenges the status quo.

1.1.6 The Author takes the view that in many organisations and projects there is considerable "inertia" which acts as an "obstacle" to change – no matter how attractive the alternatives might be.

1.2 Context – Industry Performance

1.2.1 The UK construction industry has a very wide performance margin. That is probably also true of the many parts of the international construction market. Sydney Opera House commenced with a A$7M budget and finished with an out turn cost above A$100M. Holyrood House (the Scottish Parliamentary Building) also has a record for not meeting initial budgets by a similar wide margin. In fact so bad was the under performance of Holyrood House that a Government Inquiry was ordered that was lead by Lord Fraser[3]. The next section briefly considers the key lessons that emerged from Lord Fraser's inquiry.

1.3 Holyrood House – Scottish Parliamentary Building

1.3.1 Holyrood House provides an exemplar case study for programme managers, unfortunately for the wrong reasons. The history of the project is summarised at Appendix 1. The first project estimate was for a simple refurbishment of an existing building and was reported at £10m in the devolution White Paper of September 1997. The White Paper also contained an estimate for the cost of constructing a new building for the Parliament at approximately £40-50m. This estimate was made prior to the identification of a location or a design.

1.3.2 In the summer of 2003 and with construction nearing completion project costs had soared to £374m and Parliament announced that there would be an inquiry into the Holyrood building project. Lord Peter Fraser of Carmyllie QC was subsequently appointed to carry out an independent Inquiry.

1.3.3 Lord Fraser published his report in September 2004. It is a scholarly document of some 300 pages that followed 49 days of Hearings and much further investigation and research. When presenting his report Lord Fraser commented as follows:

1.3.3.1 "This unique one-off building could never ever have been built for £50m and I am amazed that for so long the myth has been perpetuated it could. As it is now completed the building was bound to have cost in excess of £200m and that could or should have been anticipated at least from the time of the Spencely Report. It is difficult to be precise but something in excess of £150m has been wasted in the cost of prolongation flowing from design delays, over-optimistic programming and uncertain authority. That is an exceptionally

[3] Lord Fraser's report into Holyrood, together with the evidence, witness statements and other key information is found at www.holyroodinquiry.org

regrettable and an uninspiring start for a new Parliament. However I trust that the exposure of my Inquiry has exhaustively given to these issues will have had the necessary cathartic effect that the Presiding Officer sought."

1.3.4 The principal conclusions in Lord Fraser's report were as follows:

1.3.4.1 Donald Dewar (the first secretary of state) was determined to provide a site and a building for the new Parliament as soon as possible. The timetable for construction dictated the adoption of a "fast track" procurement method entailing relatively high risk. The decision to adopt construction management was taken without an adequate evaluation or understanding of the extent of risk involved and without being referred to Ministers.

1.3.4.2 The figure of between £40 and £50 million originally put before the Scottish public was never going to be sufficient to secure the construction of a new Parliament building of original and innovative design.

1.3.4.3 Whenever there was a conflict between quality and cost, quality was preferred.

1.3.4.4 Whenever there was a conflict between early completion and cost, completion was preferred without in fact any significant acceleration being achieved.

1.3.4.5 Not until it was too late to change was there any real appreciation of the complexity of the Architect's evolving design and its inevitable cost.

1.3.4.6 Tempting as it is to lay all the blame at the door of a deceased wayward Spanish architectural genius, his stylised fashion of working and the strained relationship between his widow and RMJM in Edinburgh, the analysis of the Auditor General is unimpeachable. Costs rose because the client (first the Secretary of State and latterly the Parliament) wanted increases and changes or at least approved of them in one manifestation or another.

1.3.5 One of the key findings of the report is the fact that "aspiration" changes (from simple refurbishment to landmark building) meant that what started as a £10-50m project ended as a £200m project. In other words what was actually built should have cost around £200M. However this "correct" cost almost doubled for various reasons, the most obvious being an inability to properly manage change within the both the client team (deciding what is wanted) and the delivery team (designing and building what is wanted). It would seem that this project lacked proper leadership from the outset.

1.4 Discussion - Key Questions

1.4.1 The key questions to be addressed in this paper include:

1.4.2 How to provide client leadership and so overcome "inertia" within the project team?

1.4.3 How to achieve collaboration on capital projects/programmes?

1.4.4 What other lessons can be applied from the Honda case study?

2 Honda Case Study

2.1 How to provide client leadership - Overcoming Inertia

2.1.1 Client leadership is the key to overcoming inertia. Leadership is not about managing the project but about setting a culture and a context.

2.1.2 Inertia can mean "safe" or "defensive" strategies characterised by repeating previous approaches which have "worked" or at least "not failed".

2.1.3 Honda understood that the client's role was central to the success of the project once the decision was made to develop the New European Plant at Swindon in 1997. Through its automotive business, it recognises that with any business operation it is important to get close to the supply chain. It understands that in all areas of its business there are risks. Its strategy is therefore about risk *management* not risk avoidance.

2.1.4 One of the first decisions was to appoint SSOE Consultants of Detroit USA as consulting engineers for the project. SSOE is an expert in car plant design and had worked globally with Honda for many years. Thus the decision to appoint a non UK based consultant was in Honda's eyes a low risk decision, although others would probably think differently. Tony Damon, head of engineering at SSOE discusses Honda below:

2.1.4.1 I find that Honda, as an organisation, has been more personally involved in their projects than most clients. This is not to say they are micro-managers, but rather, well-informed, knowledgeable and experienced owners, who know what they want. They take a personal interest in the project and its success. Honda has been excellent at setting forth the vision and goals of the project at the beginning of the project; setting the strategy of how we would achieve the goals; and then personally participating in the tactics to follow through on the strategy. They ensured that these goals were communicated to all members of the project team (designer, construction manager and contractors). Honda worked with the designer and construction manager to establish the key measures of success and then followed through with monitoring progress toward the goals throughout the project.

2.1.5 During discussion and interviews with the project participants a number of factors came up that relate to client leadership. These were:

2.1.5.1 Honda placed particular emphasis and effort on identifying its corporate objectives and then developing a strategy to achieve these objectives.

2.1.5.2 Honda put considerable emphasis on construction manager selection for the project. It was of paramount importance to select the right team of people with the right attitude who could buy into a 'one team one goal' approach.

2.1.5.3 Honda established a culture of transparency in which problems and issues were not held back but were managed in a pro-active manner as soon as they became visible. There was no attempt to create a blame culture.

2.1.5.4 Honda is active at the early stages of a project. It pre-empts and is pro-active; there is a strong emphasis upon planning at all stages of their projects.

2.1.5.5 Honda sought to establish a team approach at all stages of the project. Indeed Honda was aware that the only way the project would be successful would be if everyone bought into the 'one team one goal' philosophy. Accordingly, everyone was required to sign the following project charter: 'We the undersigned are committed to achieve the successful completion of the project and undertake to work together in a spirit of mutual respect, fairness and using flexible attitudes to achieve our goals to the benefit all parties'. (That is, 'one team one goal' not 'two teams own goal'.)

2.2 How to achieve collaboration on capital projects/programmes?

2.2.1 One key aspect is the strategy of risk management. Honda is an expert in car manufacturing. It is also an expert in "business and management". Honda knows its limitations well and ensures it has access to the right level of external expertise at the right time. It also knows how to manage that expertise. In other words it manages the risk of lack of knowledge by bringing in external experts at the right time.

2.2.2 Unusually for many major projects it engages with its lawyers at project inception as part of the risk management process. It understands that lawyers can add value if engaged early on

in a project. Traditionally lawyers enter major projects near the end when everyone is trying to find a "scapegoat" and therefore source of funding of the cost overruns.

2.2.3 Honda understands that the contract is simply a mechanism for risk apportionment. It asked its lawyers to draft a contract that would encourage collaboration". The result was a bespoke contract with specific clauses such as "early warning" and "updated programmes". In fact the Honda bespoke contracts carry many similar features to the New Engineering Contract[4] which has been adopted by the UK Government for the London 2012 Olympics.

2.2.4 When asked "What sets Honda apart from the others?" Paul Watchman of Freshfields (solicitors) said:

2.2.4.1 What sets Honda apart is their culture of testing the existing procedure or orthodoxy. They do not accept the status quo. On occasions they will test to the limit in the way that a car component might be tested. However their approach is not confrontational and they are willing to treat advisors and suppliers as part of a team. Their culture is pro-active and pre-emptive rather than negative, sometimes there is 'creative tension' within meetings reflecting a deep will to succeed. However there is not the fear of making mistakes that is found in some organisations.

2.2.5 Paul Rothera of Rothera Goodwin (chartered architects) stated:

2.2.5.1 Honda is not preoccupied with headline statements or preconceptions about what they ought to be doing or saying. As a result, Honda is prepared to consider what appears sometimes to be slightly out of the ordinary or off the mark approaches to solutions. In general the above attitudes run right through the client's organisation.

2.2.6 Honda recognises that conflict is inevitable on any project and within any team. However the Honda philosophy is one which, starts with a train of thought, that problems start small and get bigger if they are not identified and resolved. It is perhaps easier to imagine this perspective from the production line analogy where the same problem can repeat itself hundreds, even thousands, of times a day if left unchecked. Given this philosophy all problems were addressed openly and transparently at trade contractor and other key meetings as soon as they emerged regardless of contractual rights, remedies or blame.

2.2.7 The UK construction industry is still seen by many as "claims conscious". Some owners take the view that provided I have the right contract a claim involving a sub contractor is not my problem. However Honda's, some what counter cultural view, is that "*claims represent inefficiency".* Moreover by setting a culture and a way of collaborative way working that seeks to avoid problems for its supply chain it is pro-actively reducing the risk of being hit with claims for additional cost later in the project.

2.2.8 During discussion and interviews with the project participants a number of factors which emphasised collaboration came up repeatedly. These were:

2.2.8.1 Honda considered that the only way to secure work within tight financial restraints and to achieve flexibility of design until late into the construction programme was to use construction management as the method for procuring the works. This was seen as an enlightened "high risk" approach, which few client organisations would be prepared to take.

[4] New Engineering Contract - NEC is a modern day family of contracts that facilitates the implementation of sound project management principles and practices as well as defining legal relationships. Key to the successful use of NEC is users adopting the desired cultural transition. The main aspect of this transition is moving away from a reactive and hindsight-based decision-making and management approach to one that is foresight based, encouraging a creative environment with pro-active and collaborative relationships. www.neccontract.com/

2.2.8.2 Honda put considerable emphasis selecting the right team of people with the right attitude and expertise who could buy into a 'one team one goal' approach.

2.2.8.3 Honda established very effective and very transparent communications systems within the project. Honda also pre-empts and is pro-active; moreover there is a strong emphasis upon planning at all stages of their projects.

2.2.8.4 The Honda culture encourages the questioning of established procedures ('why?' or "what if?" are words which are frequently used at meetings, and always in a positive pro-active context). Many meetings are arranged to pre-empt future problems and to explore alternative "what if" scenarios.

2.2.8.5 Honda contracts are drafted to be as fair and transparent as possible, generally seeking to place the risk with the party best suited to managing that risk.

2.2.8.6 Effective conflict resolution is seen as a necessary part of the project arrangement. In practical terms this means that all issues are brought out into the open as soon as possible. It also meant that, on this project, regular meetings at director level were held, sometimes away from the project in order to ensure greater objectivity.

3 Other lessons from Honda

3.1 Presenting complex issues to lay persons

3.1.1 Although Honda is at the cutting edge technically it requires all staff and consultants to have the skills to present what may be a complex problem in such a way as an intelligent layperson can understand it in a short period of time. It achieves this by requiring short presentations lasting no more than 15 minutes from specialist engineers, lawyers and whoever to board members on the key issues that affect project and business strategy. The presentation may involve condensing a 100 page report into 2 diagrams and 200 words. This process itself often helps the author of the report to see more clearly the really key issues and be in a position to ultimately offer informed recommendations to the board.

3.2 Emphasis on real time Planning and Cost information

3.2.1 'Why should Honda have to be dependent upon a random aggregation of events when it procures construction?' – Mike McEnaney (Director of Business Administration, Honda of the UK Manufacturing Ltd).

3.2.2 Applying this thinking to Honda's construction activities results in a greater emphasis on planning (from the employer's perspective) than on most similar UK projects. In particular Honda prepared its own project programme using in house expertise and seconded staff. The programme was refined, developed and updated by the construction manager (Vanbots) working alongside Honda staff. The programme was given high visibility throughout the project by requiring all trade contractors to submit a programme in electronic format (Microsoft Project) at inception of their work and to update it with actual progress on a weekly basis. Honda provided some training assistance when needed, as it recognised that not all its contractors had all the necessary skills. This meant that at all stages of the project the construction manager (Vanbots) and Honda had access to a real time project programme embracing all packages of work which thereby produced a realistic projected completion date based on actual progress to date.

3.2.3 A similar approach was adopted with the cost plan. Once the project scope and budget was agreed then every design development was costed and the cost plan adjusted whether the development added or reduced the total cost. Likewise as packages of work were "bought" then the estimated package cost was changed to an actual figure.. In house Honda calls this system "front end cost control". It is predicated on proper forward estimates of all budget items. Thus if the business decides to make a late change then it is first costed to include any abortive work and then is added into the cost plan if the business agrees that there is a benefit in making the change after taking account of the premium cost.

3.2.4 Martin Challons Brown of Marsh Consulting (insurance brokers and risk consultants) stated:

3.2.4.1 'This project benefited from detailed advance planning including specifications developed with input from all stakeholders so that there were no surprises when letting out packages to contractors.'

3.3 Risk taking culture.

3.3.1 The importance of culture and risk should not be understated. If the organisational culture does not allow risk taking, which by definition must include change, then however good the alternative new methods are, they will not be adopted. In the commercial world it is often the case that conservative businesses are forced to take risks and to change in response to the market; failure to do so would prejudice survival. In fact, many businesses which fail do so after eventually recognising the need to change but too late in the day to ensure survival. In the non–commercial world there are not the same pressures of the market place to prompt change. In many organisations there is considerable inertia, which acts as an obstacle to change – no matter how attractive the alternatives might be. The thesis of this paper is that long-term success in major programmes and projects is no different to long-term success in business as a whole. The key is a culture which allows, indeed even requires, risk taking and change, but in a structured rather than reckless or foolhardy manner.

3.3.2 The conundrum for many major projects and programmes is that they are funded by Governments and other stakeholders which have a high intolerance to risk. Moreover the entrepreneurial approach is often only "tolerated" at best.

3.3.3 Education in risk management should be a key feature of future programme manager education. The benefits of structured risk taking and the fact that risk cannot be avoided, merely managed, needs to be more widely disseminated. After all this was a key feature which enabled Honda's multi million pound saving on this project.

4 Appendix 1 – Recent History of Holyrood House – Scottish Parliamentary Building

4.1.1 The genesis of Holyrood House came from the UK General Election in May 1997 which returned a Labour Government committed to holding a referendum on Devolved Government in Scotland. In the referendum held on 11 September almost 75 per cent of those voting agreed that there should be a Scottish Parliament. This result made it necessary to identify a permanent home for the forthcoming Parliament. The devolution White Paper estimated that the cost of constructing a new building for the Parliament would be between £10m and £40m. This estimate was made prior to the identification of a location or a design.

4.1.2 Several locations in Edinburgh were considered before the selected site at Holyrood was announced by the Secretary of State in January 1998. The four-acre Holyrood site lay at the foot of Edinburgh's historic Royal Mile next to the Royal Palace of Holyrood House and Holyrood Park. The site had a long history as part of the medieval Old Town. In early 1998 it was occupied by a Scottish & Newcastle brewery.

4.1.3 The design and construction process for the proposed Holyrood Parliament was started in January 1998 with the launch of a design competition in the international architectural press. In July 1998 the Spanish architectural practice led by Enric Miralles, in partnership with UK based RMJM, was chosen to design the new Parliament building. Enric Miralles has won many architectural prizes and competitions throughout Europe including the Madrid City prize in 1993, the National Prize of Spanish Architecture in 1995 and the Golden Lion at the Biennial of Venice in 1996. He was an invited Professor at several universities in North and South America and Europe. His designs included the Olympic Archery Pavilions, Vall D'Hebron, Barcelona, the Civic Centre of Hostalets, Spain, the sports halls in Alicante and Huesca and the new town hall for Utrecht, Holland.

4.1.4 At that stage it was estimated that the cost of construction could be contained at £55m plus VAT, fees and extras. Meanwhile Bovis Lend Lease were appointed as Construction Managers for the project. In April 1999: Pre-construction work started to prepare the site in readiness for construction to start in the summer. Just 2 months later in June 1999: the Project was transferred to the Scottish Parliament Corporate Body, headed by the Scottish Parliament's first Presiding Officer, Sir David Steel. Within a few days the First Minister reported estimated costs to Parliament at £109m including VAT, fees and fit-out.

4.1.5 Meanwhile the Opening Ceremony of the Scottish Parliament was held in July 1999 at its temporary accommodation in the premises of the General Assembly of the Church of Scotland.

4.1.6 In 1998 the cost of construction was reported at £55m plus VAT, fees and extras. The VAT fees and extras would typically add another 40% to the cost, thereby equating to a figure of around £77M. In 1999 the equivalent figure had grown to £109m and by April 2000 there was a debate in the Scottish Parliament as to whether work should continue at the Holyrood site in the light of a revised estimate of £195m.

4.1.7 Sadly the architect Enric Miralles died in July 2000 and his widow, Benedetta Tagliabue, took over as one of the lead architects. There was more sadness with the death of Scotland's first ever First Minister Donald Dewar in October 2000 which coincided with work starting on the Assembly and Committee Tower buildings.

4.1.8 In December 2000 the Audit Committee published a highly critical report on the management of the Holyrood project. The following month the main superstructure of the Members of Scottish Parliament office accommodation was completed. Later in the month the Scottish Parliament building was topped out. In June 2001 the Project director Alan Ezzi quit and was replaced by Sarah Davidson. In November 2001 Jack McConnell was elected First Minister by the Scottish Parliament following the resignation of Henry McLeish.

4.1.9 The Second Scottish Parliamentary elections were held in May 2003 and a Labour Liberal Democrat coalition continued to form the Executive. On 8 May 2003 George Reid was appointed Presiding Officer. After this election Parliament announced that there would be an inquiry into the Holyrood building project.

4.1.10 The First Minister Jack McConnell wrote to the Presiding Officer George Reid in June 2003:

4.1.10.1 "I believe that the investigation must provide the answers to the legitimate concerns that the public and Members of Scottish Parliament *alike have regarding the costs and construction of the new building. It must be independent of both the Scottish Parliament and of the Scottish Executive, and it must examine the whole of the lifespan of the project."*

4.1.11 Lord Peter Fraser of Carmyllie QC was subsequently appointed to carry out an independent Inquiry. Lord Fraser outlined the form the Inquiry will take at a press conference in Edinburgh as building work continued yards away on the Holyrood site. At the same time the Presiding Officer produced the first of his monthly reports on progress. In the July 2003 report the final cost of the Parliament was estimated at £373.9m.

5 Appendix 2 – The Author

5.1.1 Richard Bayfield, BSc (Hons), MSc, CEnv, CEng, FICE, FCIArb

5.1.2 Chartered Engineer, Chartered Environmentalist, Project and Programme Manager, Facilitator, Dispute avoider, Arbitrator, Adjudicator. Wide UK Construction experience. Member of Construction Minister's sounding board of 6 "key industry figures" appointed to advise the Government on the effect of proposed changes to construction industry legislation (2006/9). Former chairman of the Society of Construction Law. Member of Terminal 5 and London 2012 construction disputes adjudication panels. www.richardbayfield.com/