MANCHESTER 1824

The University of Manchester
Manchester Business School

BAA

The T5 Project Agreement (A)

Case study
Reference no 308-308-1

This case was written by Dr Nuno Gil, The University of Manchester, Manchester Business School. It is intended to be used as the basis for class discussion rather than to illustrate either effective or ineffective handling of a management situation. The case was compiled from published sources.

© 2008, The University of Manchester, Manchester Business School.
No part of this publication may be copied, stored, transmitted, reproduced or distributed in any form or medium whatsoever without the permission of the copyright owner.

ecch the case for learning

Distributed by ecch, UK and USA
www.ecch.com
All rights reserved
Printed in UK and USA

North America
t +1 781 239 5884
f +1 781 239 5885
e ecchusa@ecch.com

Rest of the world
t +44 (0)1234 750903
f +44 (0)1234 751125
e ecch@ecch.com

BAA: The T5 Project Agreement (A)

From their office at the Compound C, Tony Douglas, T5 managing director, and Andrew Wolstenholme, T5 construction director, had a full view of the convoy of trucks getting through the Entrance Plaza of the construction site. The £3.8bn (2004 prices) Terminal 5 (T5) programme was the largest construction programme in Europe at the time. It was developing a new terminal campus at Heathrow airport, Europe's most congested airport. Construction on site had started in the beginning of 2002 after the government authorized the project. From the onset, BAA had publicly committed to open the first phase on March 30th 2008. Unlike most infrastructure promoters, BAA opted to run the programme itself, insisting that outsourcing would cost more, not less. Close to the end of 2004, Tony, Andrew, and their leadership team needed to make a crucial decision about the contracting and procurement strategy to adopt for the late phases.

Actual cost and schedule data indicated that the T5 programme was on time and on budget. The programme was reportedly 50% done, even if some of its parts faced significant challenges ahead, namely the buildings project worth a quarter of the programme value. Mike Scott had been recently appointed as Head of the Buildings project. Unlike the manufacturing experience brought in by Tony and the Heathrow Express experience brought in by Andrew, Mike had a background as director of petrochemical projects around the world. All these senior positions aimed to ensure that "BAA had the right experience in place to meet the challenge".[1] (**Exhibit 1**)

The bedrock of BAA's project management approach was the T5 agreement, a relational contract between BAA and all the T5 first tier suppliers that junked the traditional concepts of construction contract. Instead of spelling out a set of clauses accepting that things could go wrong, and seeking to pass the blame and recover money from suppliers, the T5 agreement aimed at creating incentives for positive problem-solving behaviors that would not allow things to go wrong in the first place. BAA deemed this stance fundamental for creating totally integrated project teams with the suppliers, and enabling the latter to achieve *exceptional performance*. This ethos was exposed by the T5 commercial director[2]:

> "If things go as they normally do on major UK construction projects, the statistics say that T5 could be three years late and 80% over budget. But if we fail, the impact on our reputation and our relations with shareholders and the City would not be worth contemplating. We had to accept that BAA had all the risk for T5. It was something we could not pass on. The benefit is that by accepting that you have all the risk, you take away negativity, allow space for innovation and create the opportunity for people to perform at levels they haven't been allowed to before (…) you ask people to lose their company allegiances, and instead think of the project as their first love."

The implementation of the T5 agreement tied with a commercial policy similar to a cost reimbursable contract with incentive targets. The key question for the leadership team was whether to extend the application of the T5 agreement to the fit-out phase. Fit-out

[1] BAA press release, 2004
[2] Interview to the New Civil Engineering Terminal 5 Supplement, February 2004.

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

work seemed different from the massive works which were starting to scale down. Up to the middle of 2005, the T5 programme would have mainly involved a small number of relatively large suppliers delivering work volumes sometimes worth hundreds of millions of pounds, such as excavation and civil works, steelwork, concrete, and the backbone mechanical and electrical systems. In contrast, the fit-out phase would involve a higher number of work packages, such as doors, flooring systems, painting, toilets, ceiling and bulkheads, glazing and balustrades, carpets, and desks. These packages would be, however, relatively small in value.

A preliminary analysis from the fit-out acquisition team suggested a number of approaches ranging between two extremes. On one end, BAA could award the works to the first tier general builders which were already involved through the T5 agreement. Preliminary inquiries suggested that they had the capabilities and spare capacity necessary to undertake the fit-out work. At the other end, BAA could procure the fit-out suppliers from the market, placing a tender notice in OJEC[3]. Some market research undertaken by John's team suggested that there could be some cost efficiencies associated with the latter alternative.

BAA PLC.

British Airport Authority plc. (BAA) was a private airport operator company privatized by the 1986 Airports Act and listed on the International Stock Exchange, London, since July 1987. The operation of airports was a regulated industry in the UK. The Civil Aviation Authority (CAA) was the prime airport regulator with the Competition Commission (CC) in an appellate role. The Airport Act prohibited the levying of airport charges at an airport subject to economic regulation unless permission by the CAA was in force in relation to the airport. Airport charges were connected with the landing, parking or taking-off of aircrafts. CAA granted permission to BAA levy charges in 1986 with a condition limiting the maximum amount of the airport charges imposed for 5 years from 1st April 1987. Airport charges represented about one third of the revenue for BAA. Other sources of revenues stemmed from operational activities such as services provided to the airlines and passengers.[4]

BAA's goal was to be the most successful airport company in the world. Its corporate objectives were to fully develop property and retail potential; achieve world class standards in capital investment; and ensure passengers and airlines received excellence and good value for money. World class in capital investment meant achieving exceptional performance on safety, consistency of process, design to BAA standards, standardization of components, preplanning completeness and quality, develop long term framework agreements with suppliers, and encourage off site construction to improve production productivity and reduce site congestion.

[3] The Official Journal of the European Community (OJEC) publishes notices of all contracts from the public sector, as well as from private purchases, valued above a certain threshold.

[4] Competition Commission (2002). *BAA plc: A Report on the Economic Regulation of the London Airports Companies*

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

THE TERMINAL 5 PROGRAMME

BAA submitted the planning permission application for a fifth terminal at Heathrow airport in February 1996. Heathrow was the closest major airport to central London, the fourth largest airport in the world for total passengers, and the world's busiest international airport with demand far exceeding capacity in 2001 (**Exhibit 2**). Terminal 4, Heathrow's last terminal to be built, had opened in 1986.

In the initial planning stages in the early nineties, BAA compiled a report called 2020 Vision examining the major issues, trends, and changes likely to affect airport developments. Its aim was to interpret information on future changes, offer future scenarios (e.g., ticket-less travel, new baggage systems, new way-finding strategies) and make foresight knowledge of experts accessible to the developers responsible for shaping the T5 design brief. In addition, BAA selected the renowned architecture practice, Richard Rogers Partnership, to develop a distinctive concept for the new terminal. After submitting the planning application in 1996, BAA expected getting the approval decision for T5 by 1997/8. However, the public inquiry period lasted longer than expected[5], and government approval to develop T5 only arrived in November 2001.

The scope of the T5 programme encompassed 16 major integrated projects, e.g., buildings, air traffic control tower, earthworks, airfield, baggage handling system, and two train extensions. These projects, in turn, were subdivided in 117 sub-projects (**Exhibit 3**). The cost of the programme was budgeted at £3.1bn at 2002 prices, with a 20% budget contingency (£600m) to account for risks such as wage increases, planning, design, and construction failures, accommodation of changes in requirements, unsatisfactory supplier performance, and fraud/theft. The size of the T5 programme was very large for BAA as its equity was valued at £5.5bn in the end of 2002. As BAA stated "T5 represents the commitment of almost £4bn to an extremely complex and protracted project, combining engineering and construction risk."[6]

To compensate for the delay in getting government authorization, BAA compressed the original T5 control programme, which lasted 6 years including a 7-month buffer period designated for 'risk.' A major review resulted in a 5-year programme, including a target construction period of 4 1/2 years and a 6-month period for trials, testing, and operational readiness. Unlike the previous programme, the new programme did not include a buffer period for risk. Risk simulations undertaken by the planners suggested a 75% probability that it could be delivered in 5-years. To give assurance of delivering the programme in 5 years, planners recommended compressing the target construction period to 4 years. They acknowledged, however, that some assumptions in the control programme were challenging. In particular, planners expressed concerns that the programme reserved only 11-months to complete 275,000 sqm of fit-out. Benchmarking with other airport projects suggested nonetheless that the targets were doable (**Exhibit 4)**

[5] This expectation was shared by other entities: the Merges and Monopolies commission, for example, assumed in its 5-year review in 1996 that the Public Inquiry would conclude in 1997 and on-site construction would start in 1998.

[6] CC commission report (2002).

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

BAA also established a formal stage approval process to improve the robustness of the programme. Stage approvals were the gateways through which sub-projects had to pass to move from one stage to the next by demonstrating that all key stage deliverables had been satisfactorily completed: Four main stages were defined — development, definition, production design, and manufacture & assembly — separated by approval periods respectively termed A-day (inception), B-day (feasibility), C-day, and D-day (**Exhibit 5**). C-day approval was needed to move a project from the definition design stage into the production design stage. Likewise, D-day approval released the funding necessary to move a project from production design into the manufacturing, assembly, and construction. D-day approvals were granted to teams after they developed a production execution plan exhibiting a high degree of design completion and price certainty, with indicative percentages around 90 to 95% based upon bottom up supplier pricing.

THE T5 AGREEMENT

The T5 agreement was a contract with the first tier suppliers, including architects and engineering design consultants, general and specialized contractors, and manufacturers. The BAA legal and commercial teams designed the contract aiming to minimize the conflicts that usually plagued major projects. The T5 agreement drew on the Rethinking Construction, a report coordinated by Sir John Egan in 1998 (BAA CEO between 1990 and 1999 after a career in auto manufacturing), as part of an attempt by the British government to dig the construction industry out of its poor safety and productivity performance. As Sir John Egan explained[7]:

> "We felt that T5 was a very dangerous project because it was so big – it would be very close to the net worth of the company. We realized that whatever we did, we would have to put the landing charges up at Heathrow, but we felt that it wasn't possible to do so unless we were doing the job of construction very well."

The ethos of the T5 agreement was to move away from the traditional practice of infrastructure clients choosing suppliers who bid lowest. In this practice, clients often perceived suppliers as attempting to opportunistically exploit design errors and omissions for claiming payments for additional work which offset the tight profit margins built in the bid. Due to disagreements between suppliers and clients about the legitimacy of these claims, costly litigation often followed causing work stoppages and delays. In contrast, the T5 agreement aimed to encourage suppliers to move into best practice and exceptional performance, and 'to actively seek and offer affordable and excellent solutions.'(**Exhibits 6a, b**) It applied to all first tier suppliers, as Fiona Hammond, BAA legal director, explained:

> "One of the ways to manage our risk is through integrated supply chains. You cannot have a truly integrated team unless they're working under the same baseline. It's farcical to think you can have an integrated team if they've different commercial expectations, objectives, and baselines."

[7] Financial Times Interview (May 8, 2004)

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

The T5 agreement also acknowledged that the targets for T5 were deliberately aggressive, as BAA was interested in creating a programe environment "where custom and practice is not accepted as a given, where we all continually challenge how we can be successful." Accordingly, the T5 agreement exhorted suppliers to change work practices (**Exhibit 7**):

> "Thinking of others as well as oneself, so that we [BAA and suppliers] all win together, is a must. Being able to see the wider benefits will entail a change of mindset, possibly changing out people; there will be little room for those who are not committed, who want to spend all their time saying 'why it can't be done'; it will require the enthusiasm and energy of those who are prepared to work 'how it can be done'. No, this contract doesn't contain much of the conventional type of language, the 'legalese'; yes - it does try to set out in language more familiar to those at the workface how together we might be able to make it work - to deliver success. We make no apology for this."

BAA ideal was that the suppliers would achieve "exceptional performance," meaning they would be better than anything anyone else had achieved before. The T5 agreement further added:

> "We have ambitions to achieve new standards, both in the building of the facilities and in the built facilities. While this is our ultimate goal and is indeed implicit in the challenge, our minimum requirements are in practice governed by a set of achievable targets. We have benchmarked the best of UK construction in establishing achievable targets. We have consequently called this level of performance "best practice". This is the minimum level of performance that we require everyone on the project to commit to. While this is a step up from the normal levels of performance required, "business as usual", this should not be a problem. We have procured companies and people on the basis that you are experts in your field; you are leaders in your industry; you are making available people and skills committed to this expected level of performance."

THE T5 AGREEMENT COMMERCIAL POLICY

The T5 agreement was associated to a policy document spelling out the commercial terms and conditions applicable to the relationship between BAA and its first tier suppliers. This policy supported the basis for remuneration, and defined what BAA would (not) pay for. It also provided an overview of the commercial procedures and summarized the approach for managing the reimbursement of T5 suppliers. Further, the policy spelled out that first tier suppliers were expected to adopt much of its content for the commercial management of key sub-tier suppliers. The principle for remunerating suppliers was reimbursable cost of time and materials plus an agreed profit percentage. The T5 suppliers were incumbent to demonstrate to BAA that the costs had been properly incurred. The profit percentage was characterized as a 'fair reward for achieving best practice level of performance in the project.' BAA reserved the right to carry out audit reviews to audited supplier accounts, staff and labor payroll, purchase ledger systems, volume discounts, retrospective rebates, early payment discounts, and cash flow statements. The full cost transparency aimed to provide BAA with internal assurances that all costs had been properly incurred. Occasionally, BAA and suppliers could agree to either fixed rates or fixed lump sums for specific activities or elements of work, based

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

upon clarity of scope and utilization of standard products. The final profit mark up could be impacted by three key factors: (1) ring fenced profit, (2) incentive plan, and (3) the suppliers' share of insurance deductibles.

Ring-fenced Profit

The suppliers' profit was ring fenced as an agreed lump sum amount against an agreed estimate of resources for a defined scope of work. Suppliers could increase their profit margin percentage by delivering their element of work at a cost less than the estimate. Conversely, the suppliers' profit margin could reduce if the estimate of resources was too optimistic relative to the actual amount of work needed to deliver the defined scope of work.

Incentive Plan

The incentive plan aimed to provide incentives for suppliers to 'realize the client ambitions' and even exceed the 'client's expectations.' The plan consisted of sharing benefits of exceptional performance 50:50 with the first tier suppliers. The achievement of exceptional performance going into the incentive fund was calculated as the difference between the baseline target cost and the actual cost of work for each sub-project. Target costs were agreed for each sub-project separately with the team of suppliers involved in its design and implementation, and needed to reflect realistic benchmarks, yardsticks and norms free of allowances and contingencies for inherent construction risks. The members of the sub-project team had then to agree among themselves how to distribute the incentive. If the team failed to agree the shares, 50% of the benefits would be split equally among members of the sub-project team. At the early programme stages, some suppliers complained that there was an excessively long lag between the timing when the work was accomplished and the timing when the benefits would be finally awarded. This could result in people performing the work no longer being involved in the project when the benefits would be finally distributed. BAA subsequently revised these terms and conditions, especially to encourage suppliers to come out with valuable ideas at the early design stages.

Insurance Deductibles

BAA maintained full project insurance specific to the T5 programme covering the supply chain, with cover effected for Professional Indemnity Insurance (PII) and Construction All-Risks/Third Party Liability (CAR/TPL). The PII cover effected for 12 years and the CAR/TPL cover effected for 6 years plus 2 years maintenance. Shares in the benefits of realizing programme opportunities under the incentive plan had direct correspondence to the suppliers' share of liability for the insurance deductibles. Hence, where incidents resulted in claims under either policy, the supplier would pay its share of the deductible in accordance with the pre-agreed shares of the liability at sub-project level. Further, in the event of claims under the PPI insurance, the £250,000 insurance retention would also be shared by suppliers in accordance with the principles set out for determining the liability shares. Unlike the deductible, however, the latter sums could be funded by the incentive fund unless the fund would be insufficient to meet any claim, in which case the

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

suppliers would have to pay the insurance retention. Suppliers were expected to take out Employer's Liability Insurance, and ensure the insurers waived any rights against BAA and every other member of the project team.

Compensating for Change

Compensating for change was perhaps one of the most delicate aspects of managing the implementation of the T5 agreement. The categorization of a BAA request for change affected the supplier's profit margin. Changes that BAA described as 'design evolution' meant that, in the view of the T5 agreement, they did not impact the design scope:

> "Evolution isn't change…. managing the ambiguities between the objectives, potential solutions and delivery practices is a basic requirement of your and our delivery practices. This requires delivery plans and actions to evolve and adapt through the project. This evolving and adapting activity does not constitute change, but may involve transferring responsibilities, budgets, time, etc, between teams and team members."

BAA did not amend the ring fenced profit due to design evolution. This meant that while suppliers would be reimbursed for the costs incurred with additional work stemming from design evolution, the suppliers' profit margin would effectively reduce. Conversely, BAA considered as 'exceptional' all events and issues changing the project scope. In these circumstances, BAA would sanction the change and amend the ring fenced profit to keep unaffected the supplier's profit margin agreed at the onset. The extent to which an event should be categorized as design evolution or change in scope involved negotiations between BAA and the suppliers. Fiona Hammond, BAA legal director would, however, adamantly tell the suppliers:

> "The idea of building £4bn worth of infrastructure over 4 or 5 years and not have to rework and go around the loop a couple of times is nonsensical Engineering and construction move at different speeds from the business cycle. Therefore, we've to manage change and minimize it in the best way. We won't be able to get it right the first time. We need to be realistic - change is a fact of life."

CONTRACTING OUT FOR FIT-OUT

Up to middle 2005, the T5 works mostly comprised relatively large suppliers undertaking significant packages of work. Ten new aircraft stands had already been completed, as well as the spur road linking T5 to the M25 and the diversion of the two rivers running through the site. Two thirds of the 6.2 million cubic meters of earth were excavated, and a significant proportion of the 13,5km of tunnels had been executed. Further, the 117m-long rafters of the main building wave-style roof had been erected into position, and the 50-tonne pre-assembled roof of the air traffic control tower had been successfully lifted. These achievements meant that progress was close to 50% for total expenditure slightly under £2bn. Most milestones had been successfully achieved on or before the target date, and few in 2005 seemed to be under some pressure. In addition, the latest Incident and Injury Free report communicated that the programme had recently clocked-up 1 million man-hours across the whole site without a reportable accident. And even the last industrial relations update showed good news in the sense that the steel erectors union had accepted the revised pay offer.

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

In terms of design progress, the development team had presented in the summer a detailed outline of the interior fit-out of T5, and had set up demonstration areas furnished with samples so programme leaders could get a feel for the choices in terms of floors, walls, ceiling coverings, softer furnishings, color palettes, and lighting features. A number of D-days had taken place throughout 2004, including those for flooring, ceilings, bulkheads, and toilets. D-days for wall paneling, soft flooring, signage, and desks were scheduled for early 2005. An integrated baseline review had uncovered nonetheless some challenges ahead affecting in particular the buildings project, which had been impacted by the unforeseen escalation of steel prices since 2001.

Some factors suggested that the fit-out phase would be, however, somewhat different from the early works, which had been characterized by the involvement of a small number of large suppliers. The 3,500-strong workforce onsite came from about 50 first tier suppliers (**Exhibit 8**). Laing O' Rourke, for example, was undertaking a vast proportion of the excavation and civils work, a package totaling almost £1bn for the entire programme. Other important suppliers involved included Schindler for lifts; KONE for escalators and travelators; Schmidlin for curtain walling; Ove Arup, Mott MacDonald, and DSSR for engineering design; Richard Rogers Partnership and Pascal& Watson for architectural design; AMEC Building & Facilities Services for electrical and mechanical work, and Vanderlande for the £300m package related to the baggage handling system. Fit-out work, in contrast, would comprise a large number of relatively small work packages, including doors, hard and raised floors, balustrading and glazed screens, painting, wall finishes, joinery, suspended ceilings and bulkheads, desks, toilets, metalwork, internal roofs, fire-stopping, mechanical and electrical installations, pier fit-out, partitions, carpets, etc. The value of most of these packages was relatively small, estimated to seldom exceed £10m. Collectively, however, the budget for fit-out was estimated to exceed £300m.

A preliminary analysis developed by the fit-out acquisition team spelled out two quite different contracting approaches. One approach consisted of awarding the work packages to the incumbent general builders already involved through the T5 agreement. These first tier suppliers would be responsible for finding out second tier suppliers to manufacture, source, and install specialized components, such as conglomerate tiles, doors, and suspended ceilings and bulkheads. This approach reduced the operational risks. The tier suppliers were familiar with the culture and processes in place at T5, and they understood the respect-for-people requirements needed for the T5 agreement to work. Further, the project management demands on BAA-badged project staff would remain the same and the work could be rapidly allocated across the existing suppliers. Some market research undertaken by John's team suggested, however, that this approach could not be the most cost-effective, unless the existing suppliers would agree to reduce their levels of overhead and profit recovery.

Alternatively, BAA could try to directly procure key suppliers for the fit-out work packages from the international market. The typical process would involve issuing a notice at the OJEC with a call for pre-qualification documents. This would allow BAA to

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

short list a number of suppliers, which would be invited for presentations. A presentation scheme had already been developed (**Exhibit 9**). Invitations to tender would be issued to those delivering successful presentations. Based on the bids which the invited suppliers would submit, BAA would select one supplier and negotiate the final commercial arrangements for each work package. This process appeared to enable BAA to acquire the best suppliers from market at the market prices, avoiding mark ups on top of mark ups. New suppliers would also introduce potential new ideas to BAA, and the option to extend the T5 agreement to the fit-out phase remained open up to the negotiation phase. Clearly, however, there were some risks associated with this route. New suppliers would be unacquainted with processes and culture in place at T5, which meant BAA would have to educate them up front. Time would also have to be spent going through the procurement process, and the number of suppliers and interfaces for BAA to manage would increase significantly.

Occasional incidents over time kept suggesting to the leadership team that the T5 agreement was working well. Two cases in particular, the resolution of a design problem with the air-traffic control tower and a practice run for erecting the roof of the main terminal, stood out. The steel tower would rise 87 meters into the sky. When its first two sections were manufactured, they were out by 9mm. Tony Douglas noted "Normally, the manufacturers would have blamed the structural engineers, who would have blamed the steel fabricator. At first, they did just that…. but the T5 agreement allowed me to say 'Guys, this is my problem,' and send them off to find a collective solution."[8] Likewise, Tony had not doubts that the T5 agreement had been a key enabler to take the builders up to Yorkshire and spent £2.4m (2004 prices) on a practice run, raising and lowering one roof rafter half a dozen times (once in a stiff gale) to make sure that the job would run smoothly. T5 leaders also worried that putting the T5 agreement aside for the fit-out work packages could pass the wrong message to the workforce.

****

Because of the delays involved in procuring through OJEC vis-à-vis the goal of starting fit-out in 2005, a meeting of the leadership team to agree a fit-out contracting strategy was set for December 31st 2004. Mike conjectured that tabling a contracting and procurement map at the meeting would help them make sense of the overall commercial approach, and make the best decision.[9] Hence, he asked the fit-out acquisition team to produce a map summarizing the contracting and procurement strategy for the buildings project. He handed over a map from a previous project, and jotted down a number of key work packages and phases (**Exhibits 10, 11**).

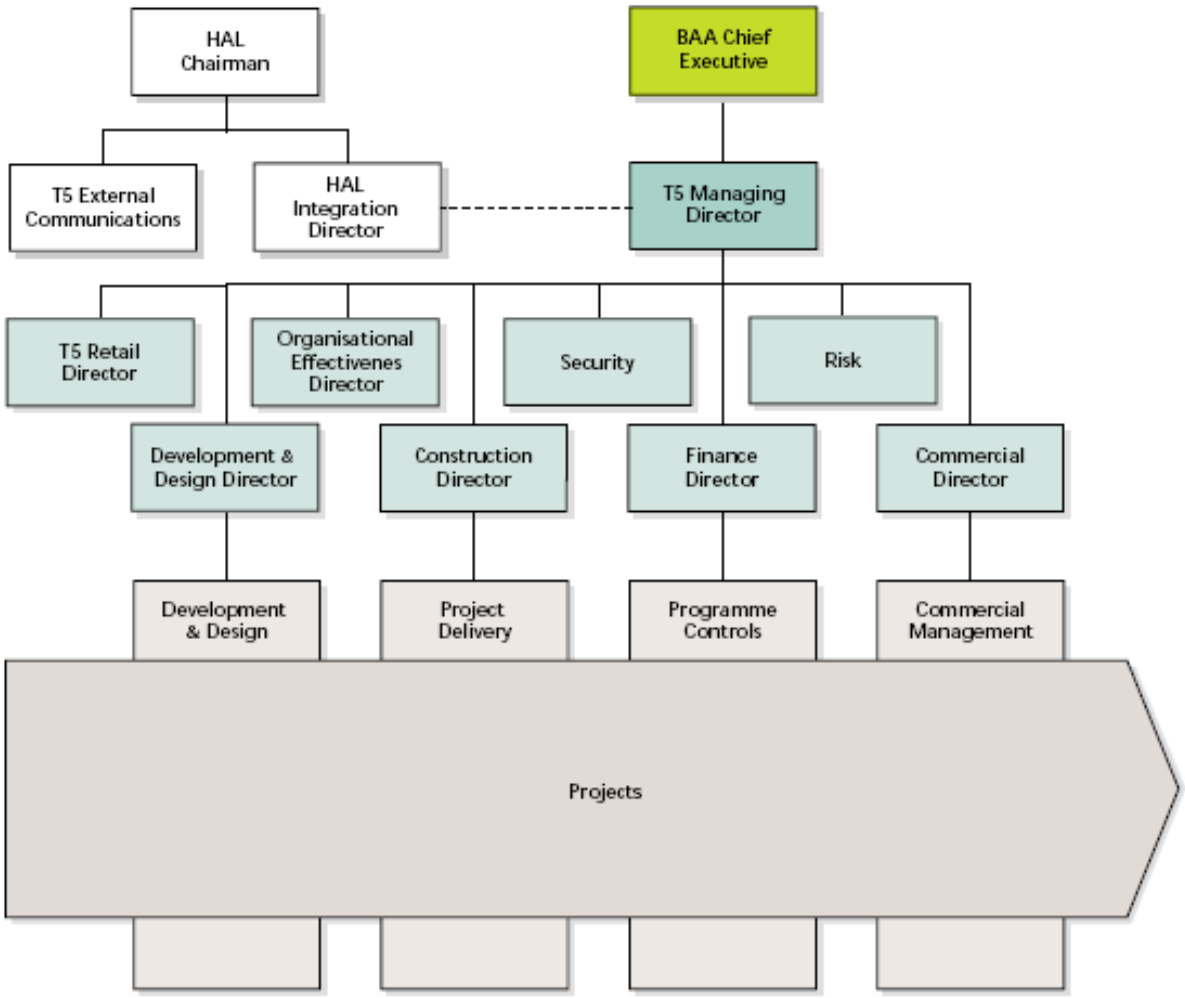
[8] Interview to the Economist (2004)

[9] Contracting maps had long been used in the petrochemical industry to depict project strategies for contracting out work packages and acquiring long lead equipment items.

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

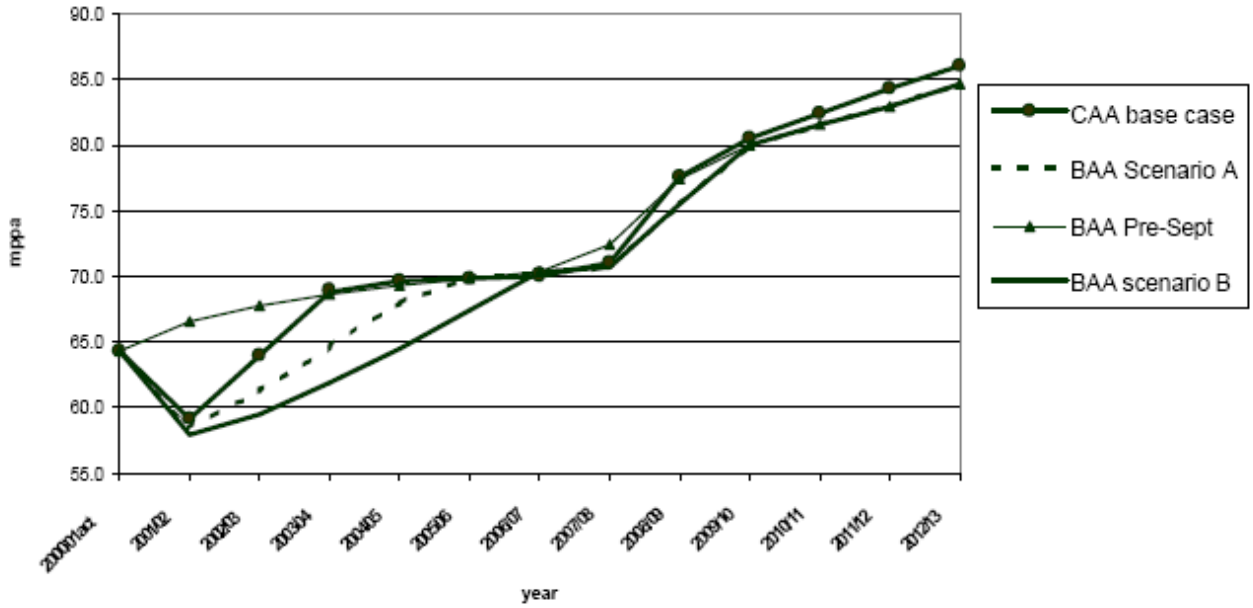
Exhibit 1 – Governance Structure for the T5 Programme



Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

Exhibit 2- Heathrow Passenger Forecasts



Competition Commission (2002). *Heathrow, Gatwick, and Stansted Airports' Price Caps, 2003-2008: CAA Recommendations to the Competition Commission*

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

Exhibit 3 – T5 Programme Overview

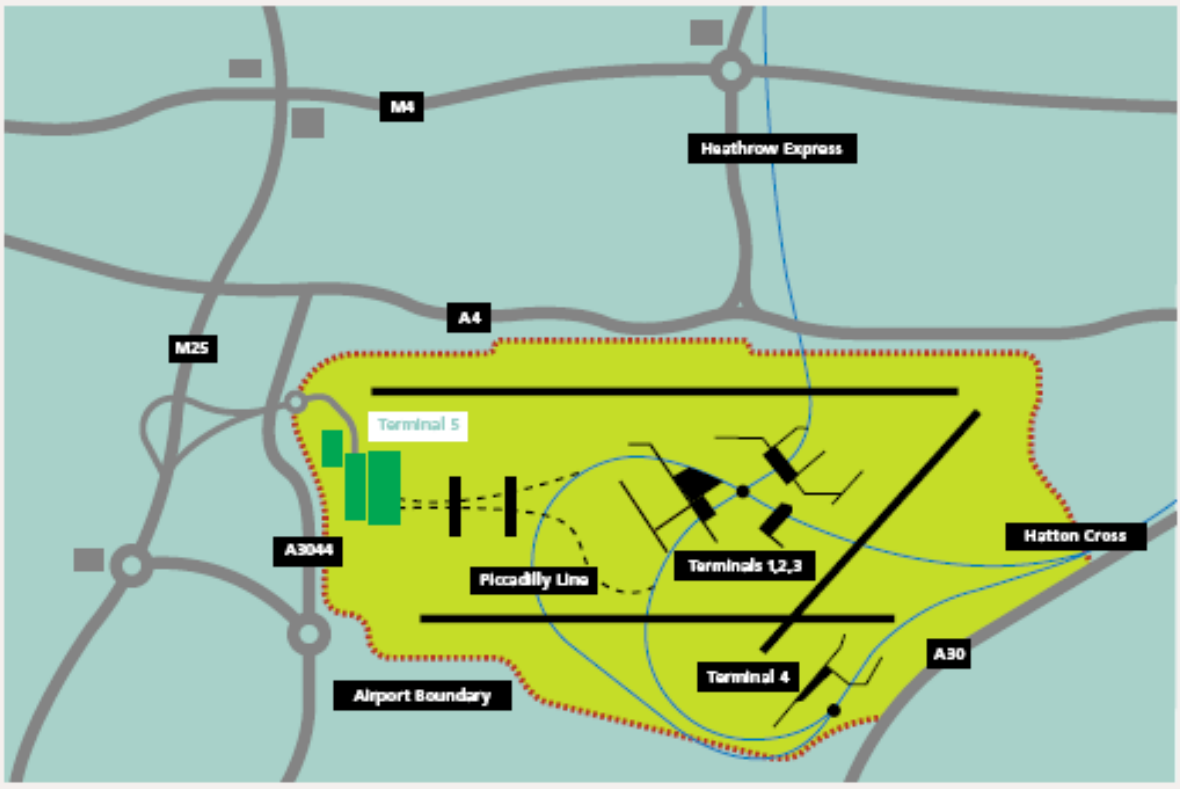
T5 comprises a core passenger terminal building accompanied by two satellite buildings, the second of which will be built later as demand for capacity increases.

The development will include new airport roads, car parks, offices and a hotel. A new 87 metre high air traffic control tower will also be built to meet the demands of air traffic control at Heathrow in the years ahead. Extensive apron and taxiway works are also involved as well as considerable landscaping.

When finished, T5 will feature a world-class public transport interchange that links Heathrow Express and London Underground's Piccadilly Line as well as a bus and coach terminus. A new Spur Road off the M25 will link T5 to the national motorway network. A target to achieve 40% of surface access journeys by public transport has been set, with an aspiration of 50%.

T5 has been designed to cater for the most advanced aircraft, including those not yet in service, such as the Airbus A380, and has the capacity to serve at least 30 million additional passengers a year.

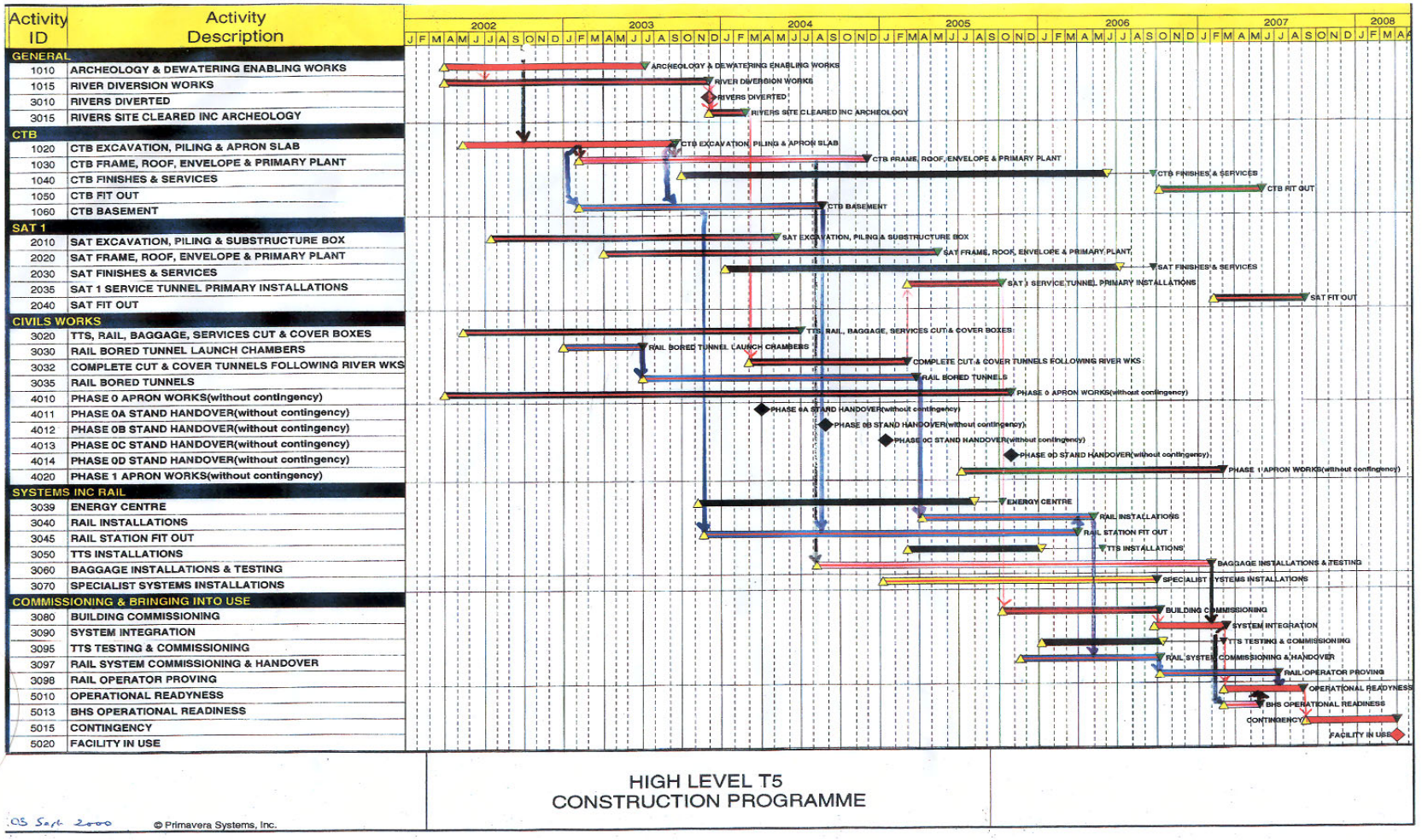
The T5 site
The site for the new terminal is within the airport's perimeter road, between two existing runways on land originally occupied by the Perry Oaks sludge works, to the West of the central terminal area. It comprises around 260 hectares of land and was acquired by BAA in summer 2002. Thames Water retain ownership of a small site within the T5 site, to enable the operation of their temporary works until Iver South works are commissioned in 2006.



Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

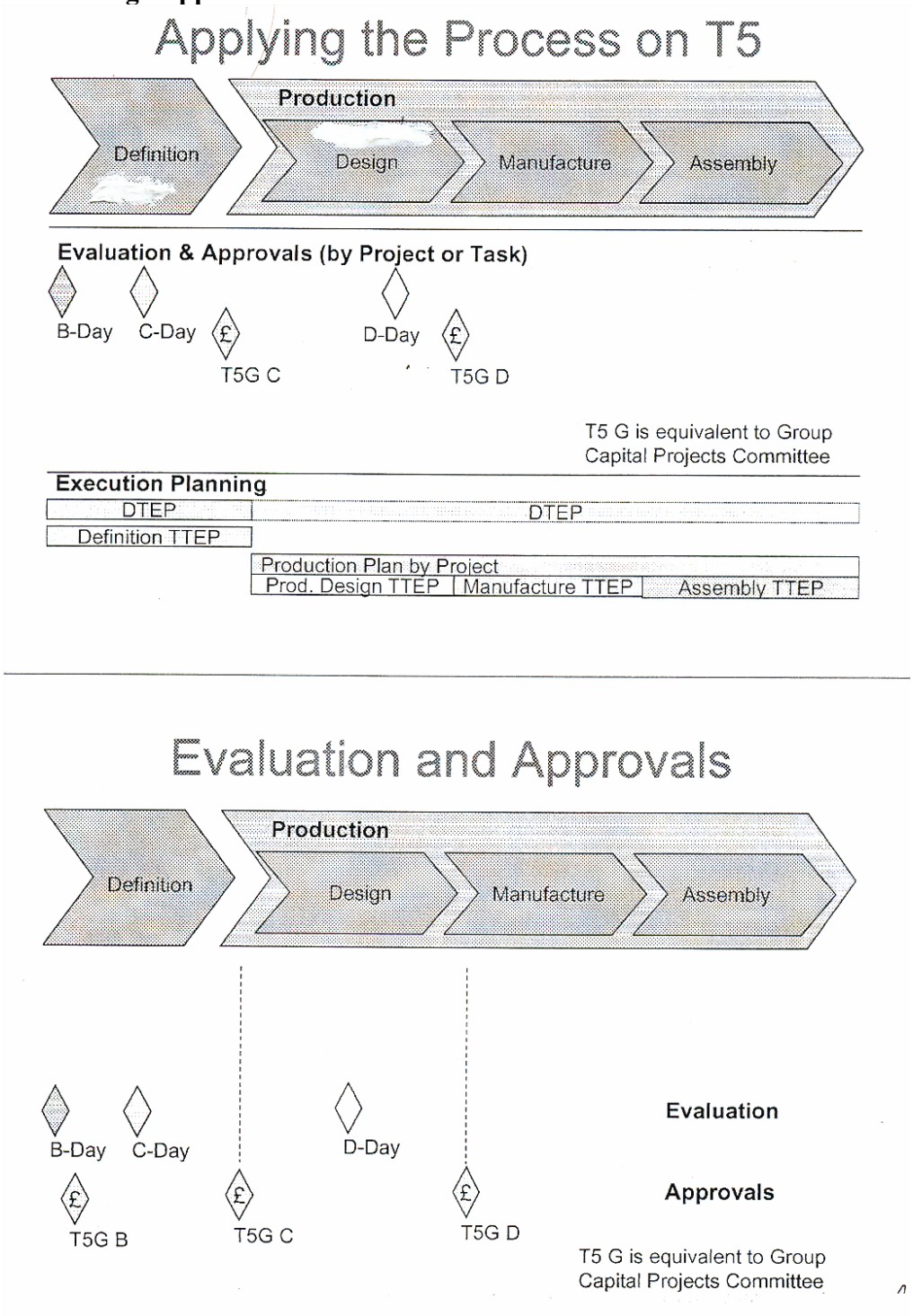
Exhibit 4 – High Level T5 Construction Programme



Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

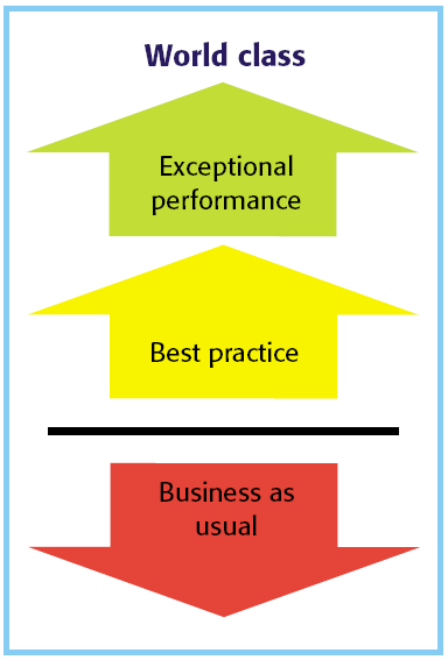
Exhibit 5 – T5 Stage Approval Process



Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

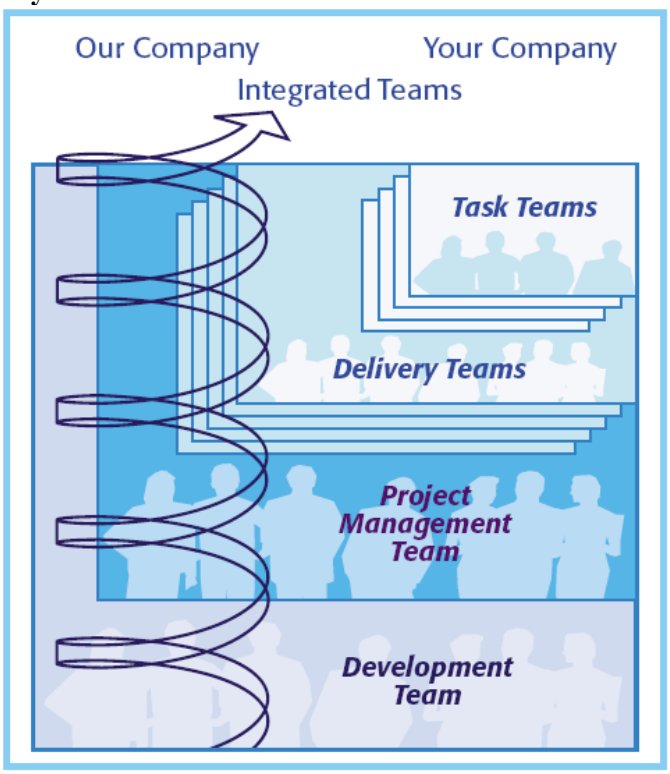
Exhibit 6a - Setting New Standards



Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

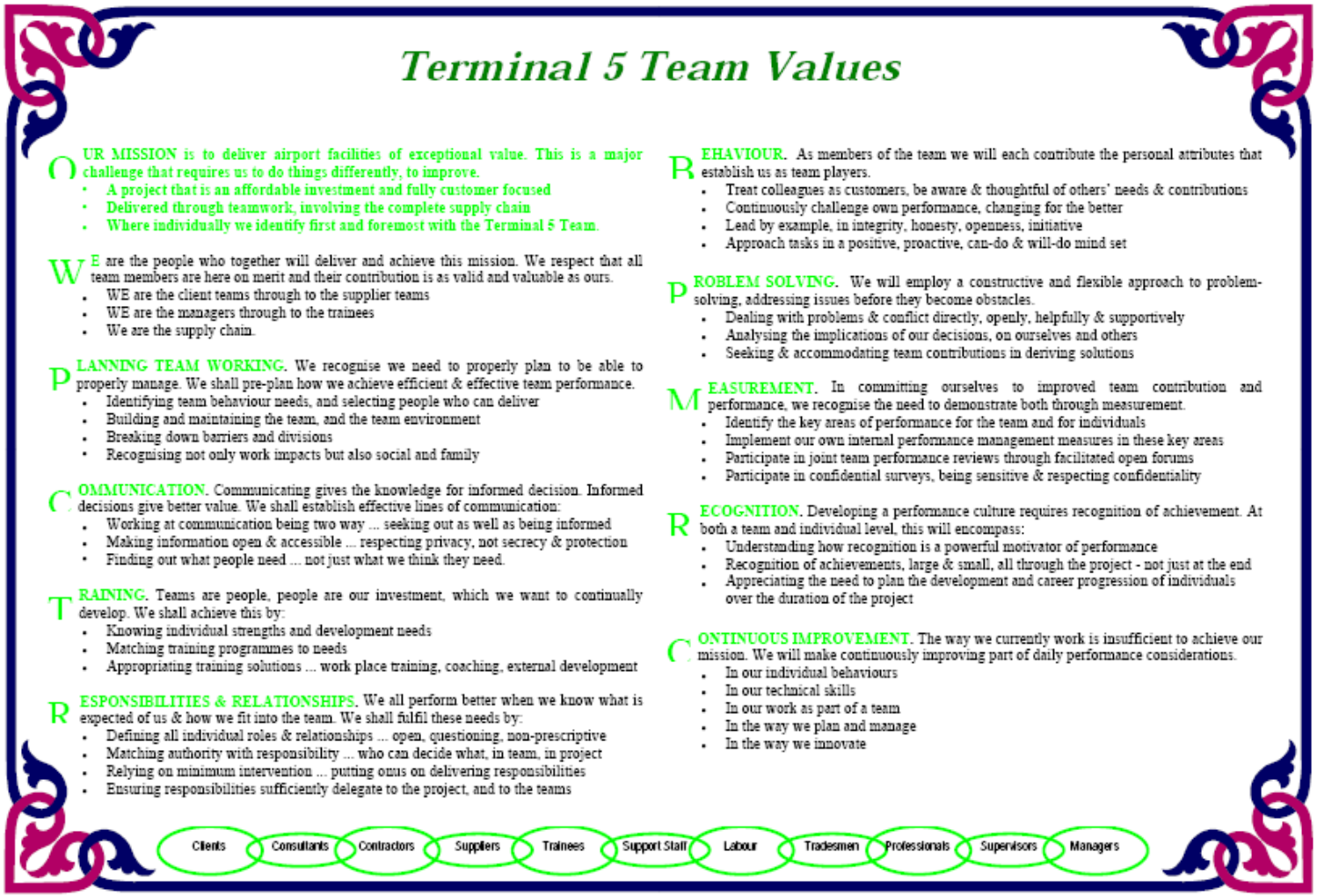
Exhibit 6b – Who are 'you' and 'we'



Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

Exhibit 7 – Terminal 5 Team Values



Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

Exhibit 8 – Excerpt of List of Incumbent First Tier T5 Suppliers

Project Wide	
Halcrow Group LTd.	*Opportunity and risk management* *Strategic planning and design services*
Turn and Townsend Group	*Cost consultant services*
Mott Mac Donald, Ltd	*Structural, tunnel, and rail consultants*
E C Harris Group Ltd	*Cost consultant services*
Bovis Engineering Ltd	*Planning supervisors*
Parsons Brinkerhoff Ltd	*Project management and support services*
Warrington Fire Research Consultants	*Fire engineering services*
Mason Land Surveys Ltd	*Land surveying services*
Campus civils	
Air BP	*Design and Engineering of refueling system*
AMEC Civil Engineering, Ltd.	*Airfield Pavement Delivery*
Carillion Construction Ltd.	*Mechanical and electrical contractor services delivery*
Laing O'Rourke Civil Engineering Ltd.	*Civil construction infrastructure & logistics delivery*
TPS Consult Ltd.	*Design consultants for campus and airfield pavements*
Rail & Tunnels	
Laing O'Rourke Civil Engineering Ltd.	*Civil construction infrastructure & logistics delivery*
Morgan/Vinci	*Deep bored tunnels delivery*
AMEC	*Building services delivery team*
Alcatel Telecom Ltd.	*Signalling, communications, & control services*
Balfour Beatty Rail Projects Ltd.	*Track & tunnel rail design & delivery*
Campus planning and buildings	
AMEC Building & Facilities Services	*Building Service Delivery Team*
Ove Aup & Partners Ltd	*Structural design consultants*
DSSR	*Services (mechanical & electrical) design & engineering consultants*
Kone Escalators Ltd	*Escalator & passenger conveyor services delivery*
Mace Ltd	*Production integration*
Hotchkiss Ductwork Ltd	*Ductwork services delivery*
Laing O'Rourke Civil Engineering Ltd.	*Civil construction infrastructure & logistics delivery*
Pascal& Watson Ltd	*Production architectural consultant*
Richard Rogers Partnership	*Lead architectural consultant*
Rowen Structures Ltd	*Building frame services delivery*
Schindler Management Ltd	*Lift services delivery*
Schmidlin (UK) Ltd	*Curtain walling service delivery*
Mansell Construction Services Ltd	*Fit-out contractor& fixed links & nodes*
Hathaway Roofing Ltd.	*Roofing design and construction delivery service*
Chapman Taylor	*Architectural retail design services*
HOK International Ltd	*Architectural station design consultant, architectural production & brief development*
TPS Consult Ltd.	*Design consultants for campus and airfield pavements*
Warings Contractors Ltd.	*Fit-out contractor*

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

Exhibit 9 – Supplier Presentation Scheme

INTRODUCTION

Over the years of developing collaborative and integrated team working we have recognised that people are the vital link in achieving a shared vision leading to a fundamental change in performance and operation.

THE TEAM

We would therefore like to meet the people at various levels within your organisation who would be part of the team working with us on T5 programme. Your team should include (but not necessarily be confined to)

- Executive Director
- Project Leader responsible for day to day operation on T5
- Design Leader responsible for T5
- Lead Commercial / Cost Manager

THE PRESENTATION (TOTAL 25 MIN)

OVERVIEW (10 MINUTES)

We, the T5 integrated project team have to meet the HAL Client challenge to develop new assets with increasing efficiency and effectiveness. Hard won experience has shown that conventional project strategies are not good enough to successfully meet the challenge. ***Explain how your Company and the quality of your people will add value to meet this objective.***

VISION FOR 2007 (15 MINUTES)

Move forward in time. The year is 2007 and the Ceilings Package is considered to be the most successful package team on the T5 programme success. You, as part of the integrated team, have delivered a product, which by any measure has achieved world-class results. Working in a dynamically complex environment, all aspects of your work on T5-production design, innovation, commercial management, production planning and execution,-have set new standards of excellence, and are now considered to be the benchmark by which future work will be judged. *Using the whole of your team to present, describe what it looks and feels like to be part of the integrated Team working on T5. What have been the achievements and successes?*

PRESENTATION Q & A (20 MINUTES)

After the presentation there will be a general question and answer session, both to probe the vision in your presentation and to enable us to find out more about your key people.

THE DESIGN (20 MINUTES)

Based on the Appendix J (Functional Criteria Document) we would like you to demonstrate your understanding of our design requirements.

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

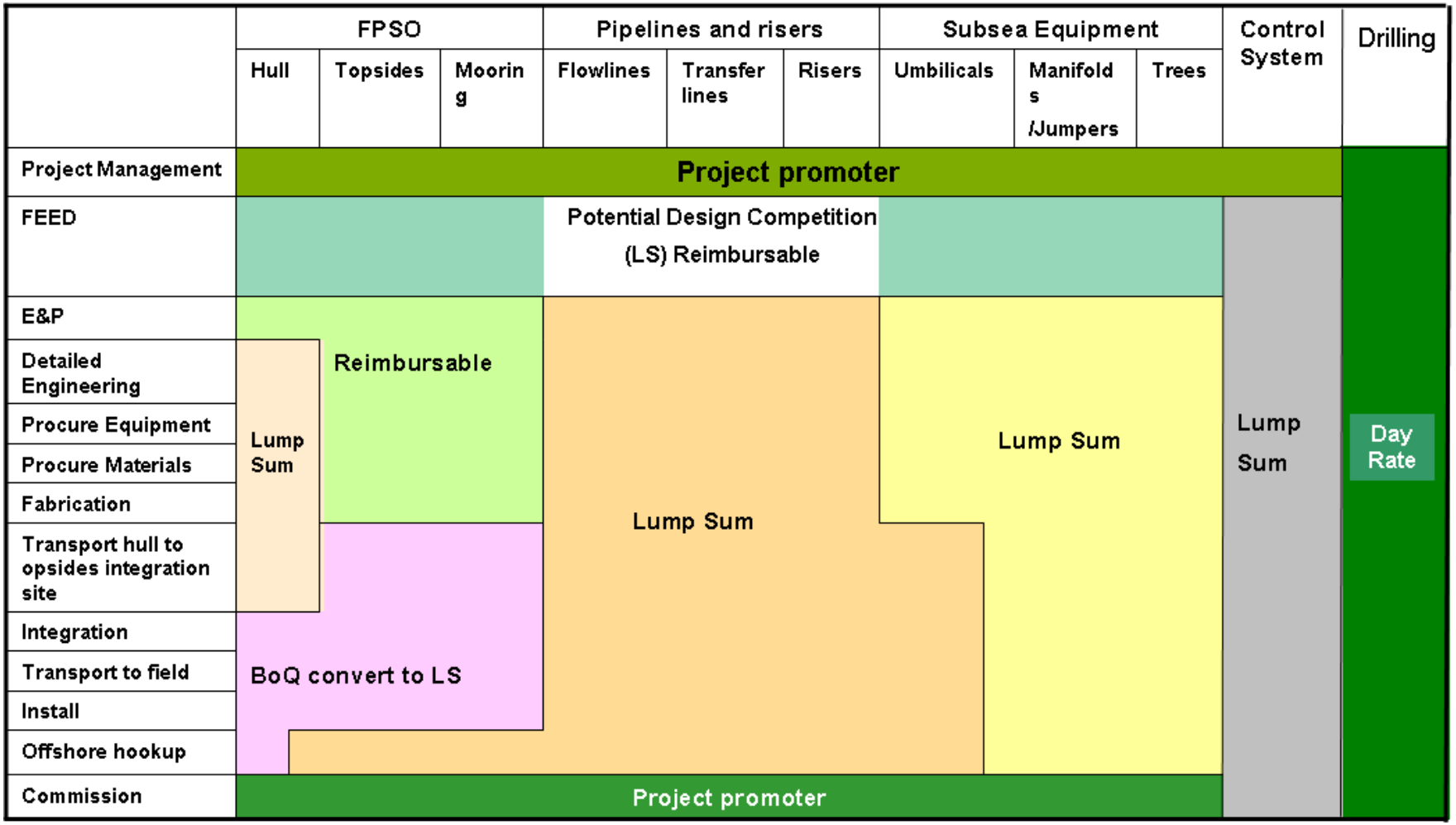
DESIGN Q & A (25 MINUTES)

After the presentation there will be a general question and answer session based on your understanding of the design requirements.

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

Exhibit 10- Example of Contracting and Procurement Map



Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester

Exhibit 11 – Sketch of a Contracting Map Template for the T5 Buildings Project

	Baggage Handling System	Excavation & Civils	Steel Superstructure	Roof	Facade	Escalators & lifts	Mechanical & Electrical Systems	Interior Fit-Out						
								Flooring system	Ceiling	Glazing, balustrades	Toilets	Carpets	Seating	Furniture
Project Management														
Conceptual Design														
Design Development														
Production Design														
Procurement														
Installation														
Testing & Commissioning														

Dr. Nuno Gil, Manchester Business School, The University of Manchester, prepared this case as the basis for class discussion. The case does not intend to serve as endorsement, source of primary data, or illustration of effective or ineffective handling of an administrative situation. Specific data, names, and situations in the case may have been intentionally altered.

Copyright © 2008, Manchester Business School, The University of Manchester