

RADIX PAPER NO 22
MAY 2021

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Produced in partnership with
gleeds

RADIX

THINK
TANK
FOR THE
RADICAL
CENTRE

**TICKBOX
INFRASTRUCTURE**





“THANKS TO THE
PLANNING SYSTEM,
PEOPLE CANNOT
AFFORD TO MOVE.
BUSINESSES CANNOT
AFFORD TO GROW
AND CREATE JOBS -
TEAR IT DOWN AND
START AGAIN”

BORIS JOHNSON

1. INTRODUCTION

“Thanks to our planning system, we have nowhere near enough homes in the right places,” wrote the prime minister in the introduction to the recent planning white paper. “People cannot afford to move to where their talents can be matched with opportunity. Businesses cannot afford to grow and create jobs. The whole thing is beginning to crumble and the time has come to do what too many have for too long lacked the courage to do – tear it down and start again.”

This report is drafted with this somewhat destructive boast as a background. It is perfectly clear that there are indeed delays and other problems getting agreement for specific building or infrastructure projects. Its research is designed to delve more deeply into understanding these issues to find out why, drawing on the direct experiences of experts in the field, from both business and academia.

Our aim is to balance the challenge of reducing bureaucracy and keeping things moving with the need to prevent incompetence and inefficiency.

For this, we want in particular to acknowledge the input of our partner, global property and construction consultants, Gleeds. However, the opinions and recommendations set out herein are those of the authors and we welcome comment upon them.

2. BACKGROUND

"The shift towards a 'checkbox' culture was a particular source of cynicism because it has created a shadowland where things are not as they seem or as they are measured and represented."

**Prof Darren McCabe,
Lancaster University.**

TICKBOX CULTURE HAS
RESULTED IN AN
OVER-ZEALOUS FOCUS ON
RULES AND REGULATIONS
RATHER THAN ISSUES
AND PEOPLE

We have spoken to a range of people in the infrastructure industry.

The full list of the main people we have interviewed is in Appendix A.

2.1 WHAT IS TICKBOX?

We need to explain the title before we set out what we found. 'Checkbox' is a term coined by one of the authors of this report in January 2020, when his book on the subject was published arguing that 'checkbox culture' tends to render processes less effective and more costly, while lying behind disasters and injustices from Grenfell to the targeting of Windrush migrants by the Home Office.

Checkbox culture arose from the introduction of the detritus from the New Public Management, which emerged in the 1980s in the form of targets and KPIs in corporate governance and official bureaucracy. It has resulted in an over-zealous focus on rules and regulations rather than issues and people. It is also:

- *Associated with slow, dehumanised decision-making in organisational settings.*
- *Obvious in its malign effects to those who are subject to it; the only people who are blind to it tend to be people at the centre and far from its consequences, senior civil servants or ministers, senior managers, IT consultants and similar.*
- *Similar to the phenomenon known as 'Goodhart's Law' which implies that numbers or targets used to control people will always be inaccurate.*

Checkboxes are not the same as checklists – which are a useful tool for professionals – because checkbox tends to involve control from the centre. Nor is it the same as bureaucracy – often checkbox takes the place of bureaucrats, because it is now regarded as possible to use IT to automate it.

In practice, tickbox culture has been widely criticised in social work and criminal justice, but has really only seen a successful pushback against it in places where professionals have more power, as in education – where teachers are, for the time being, encouraged to teach the subjects as they feel they ought to. The exception here is the NHS, which remains particularly prey to tickboxing.

Infrastructure is not an area where there has been much investigation of tickboxing – with two exceptions. Planning has been at the heart of the debate, fairly or unfairly, about unnecessary processes. Also, the inquest into the deaths of 72 people in the Grenfell Tower fire in 2017 has focused some attention on how professionals had managed to sign off obviously flammable cladding materials.

Both of these are important, but we cover neither of them in detail here, for reasons that we hope will become apparent.

2.2 WHY INFRASTRUCTURE MATTERS - AND WHY NOW...

The second part of our title is around infrastructure. Infrastructure matters now, in particular, partly because major project engineering is such an important UK skill – yet our own ability to build the projects where they are needed has become seriously compromised – as we argue in the next section.

Bureaucracy and the wrong kind of box ticking has undermined our ability to build effectively – not so much because of traditional barriers by local planners – but because, as we will see, the official costings and the system to agree major projects in Whitehall have become flawed.

This is important now, just as the UK faces an unprecedented double hit from the effects of Brexit and at least two coronavirus lockdowns. We are expecting major projects to be rolled out to help kickstart the UK economy back into full health. That is why the process for green-lighting these needs to be looked at now, otherwise we risk a series of long, frustrating and possibly expensive delays.

UK infrastructure expertise may be the most innovative, certainly among the most impressive in the world. This report suggests ways in which the system for agreeing its projects can nevertheless be compromised – and what could be done about it.



THAT IS WHY THE PROCESS FOR GREEN-LIGHTING THESE NEEDS TO BE LOOKED AT NOW, OTHERWISE WE RISK A SERIES OF LONG, FRUSTRATING AND POSSIBLY EXPENSIVE DELAYS

3. THE BUREAUCRACY PROBLEM

Behind so much of the other problems described in this pamphlet lies the decline of local government and strategic planning.

It is said that Britons excel in a crisis, and this would certainly be the view of Professor Ian Wray, one of the country's foremost planning experts, whose studies demonstrate how great upheavals such as World War II brought new dynamism and imagination to planning policy.

Between such epochal events, however, as he explains in his book, *Great British Plans*, the development of infrastructure has been slow, uncertain, and handicapped by the inconsistency of government policy.

Following periods of devastation, central government tends to loosen its grip, step back and allow committed individuals and groups with clear ideas to take over and push schemes to a successful conclusion. When 'order' is restored, so is lethargy and drift.

In a paper published last year with co-authors Jim Steer, director of high-speed rail lobbying group Greengauge21, and transport consultant David Thrower, Wray declared the UK rail network to be as broken and out of date as our hotchpotch of bomb-cratered A and B

roads that criss-crossed the country in the forties and fifties. He went on to call for an effective modern rail network to be created in the same post-war spirit of enterprise that helped build our motorways¹.

Yet the machinery that enabled such dynamic planning is no longer there. Local government has lost much of its power, while the central government planning system for transport is suffering from "utter dysfunctionality". The loss of regional power, he believes, has left Britain "haunted by indecision, fearful of long-term planning and controlled by an over-centralised Treasury²."

"All the way through to the Sixties and beyond, all the sources of long term planning and governance came through the local government machine," he says citing the successes of the urban programme and, later, the regional development agencies, which were skilled in putting together deals, sometimes with funding from the EU. "All that is gone now, including the EU. So there is a complete institutional void."

BRITAIN "HAUNTED BY INDECISION, FEARFUL OF LONG-TERM PLANNING AND CONTROLLED BY AN OVER-CENTRALISED TREASURY.

1. On the model recently proposed by the Wealth Tax Commission

2. Conversation with Prof Ian Wray, Oct 2020.

Other aspects of this problem, specifically a UK problem, include the following:

3.1 FAULTY COST-BENEFIT ANALYSIS BY THE TREASURY

The craft of cost-benefit analysis has its roots in eighteenth century Scotland and has long been recognised as a respected professional practice used to predict impartially the economic and welfare consequences of planned infrastructure.

Yet, suddenly, it is failing us. The Channel Tunnel was late, over budget and unable to pay its way. The new Crossrail line through London has already bust its budget by £450 million and is running three and a half years behind schedule. Even so, effective cost-benefit calculations on both of these projects would probably have shown them providing excellent 'value for money' for taxpayers.

Today, the cost-benefit sums have become so easy to manipulate they serve as little more than a bureaucratic fig leaf, covering what amounts to a 'dark arts' manipulation of figures to show the benefits the project champion wants us to see. In retrospect, it may have been the manipulation of cost-benefit figures in the late 1960s, by the then transport minister Barbara Castle, to make sure the Victoria Line extended to Brixton, which marked the beginning of this problem. It was the right thing to do, but not perhaps because of the cost-benefit figures³.

3. See David Boyle (2001), *The Tyranny of Numbers*, London: HarperCollins, 200.

4. Conversation with Prof Jacco Thijssen, Oct 2020.

The separation of costs and benefits is a fundamental problem, argues Jacco Thijssen, Professor of Mathematical Finance at York University. *"You cannot take construction uncertainty into account and you cannot receive revenue before you have finished construction,"* he says. *"That means benefit cost ratio is maybe not the best method of measuring these things at all."*⁴

The simplest delay on a larger, complex infrastructure project will send costs skywards and sink benefits substantially, so the two must be looked at together.

"If you're trying to get the government to spend money on a pet infrastructure project, if the numbers don't come out right, as in what you think it should be, you can just tweak the discount rate. You don't need to tweak it an awful lot, just a few percentage points here and there and you get the answer you like. It's a very sensitive parameter and shockingly under-discussed."

It is worth noting that the Government is thinking of overhauling the cost-benefit analysis system for a different reason: because it's based on what will generate the highest productivity returns, and overwhelmingly favours projects in the south east, where salaries are higher.

THE SIMPLEST DELAY
ON A LARGER, COMPLEX
INFRASTRUCTURE PROJECT
WILL SEND COSTS SKYWARDS
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SUBSTANTIALLY

This makes it really hard to deliver on the levelling up agenda under the current system.

3.2 SLOW COMMISSIONING SYSTEM AND FRAMEWORKS

Before Britain can build its way out of the pandemic to economic recovery, the obstacle-strewn commissioning pathway that confronts organisations trying to bring projects to market must be cleared.

What began as necessary, well-intentioned scrutiny of projects to be paid for from the public purse has spawned an industry of paperwork and form-filling that firms must complete before they can be considered.

Companies are often met with a wall of questions demanding “long-winded and laborious” answers detailing the minutiae of a company’s corporate purpose and ways in which it is fulfilling its social responsibilities.

These compliance questions, which one industry manager describes as being “of a psychological nature” can take on a life of their own, resulting in endless hold-ups and deferments.

Meanwhile the ‘end user’ of the planned project suffers: the commuter whose travel-to-work time could be halved, is forced to endure a longer journey, the travellers wait another year for railway and ambulances take longer to ferry the sick to a hospital further away.

Gleeds’ transport and infrastructure director Martin Smalley describes the questions as “exhaustive”.⁵ He only needs to skim a few papers from the top of his ‘in’ basket to find an example.

The smallest query, perhaps a National Insurance calculation on a payroll spreadsheet, can take weeks to smooth out.

“I understand, obviously, that all these public bodies have access to the public purse and they have to be accountable but there seems to be a reluctance for anyone to make any decisions. It is as though they have put all these processes in to trip you up rather than facilitate something. Clearly it is holding up the economy because it takes so long to get things to market.”

“It is probably as equally difficult for them as it is for us who are trying to win the work. Because they’re accountable for public money, they’ve got to come up with a process for selecting people but that process has now become too long-winded and laborious – a full-scale business.”

Luckily, the Government has recognised that there is a problem here but more could certainly be done, as we hope this report will show.

3.3 FRAMEWORKS ARE TOO SHORT

When Britain’s construction industry slumped after the deep economic recession of the 1980s, two landmark reports were commissioned by the Government:

‘Cut bureaucracy and streamline procurement to boost growth’ was the

5. Conversation with Martin Smalley, Sept 2020.

message that rang from the pages of Sir Michael Latham's influential *Constructing the Team* (1994) and automobile executive Sir John Egan's *Rethinking Construction* (1998).⁶

What investigators found to be absurdly complex procedures were to be transformed into a fast '*procurement made simple*' service through an initiative known as '*frameworking*'.

This shortcut was brought in to drastically reduce time and repetitive paperwork with only '*pre-qualified*' partners in the framework agreement needing to be invited to compete for the work.

Yet an effort to constantly improve standards has had the unintended consequence of slowing down rather than speeding up frameworks; the bar being raised ever-higher has led to longer than ever approval times for qualified contractors. Frameworks are now typically four years and the process of gaining approval to be re-admitted at the end of that time taking as long as a year – a quarter of the time spent in them. Held up by these time-consuming processes, some are starting to fear that we are right back where we started, tackling many of the same problems that plagued the industry during John Major's government.

David Hancock, construction director of the Infrastructure and Projects Authority, the government's chief advisory body for infrastructure, admitted earlier this year that little progress had been made since the Latham and Egan reports were published in the 1990s, adding wearily: "*We've been saying what is wrong with our industry forever.*"⁷

Gleeds global CEO Graham Harle, who has worked for the consultancy for 25 years, concedes that frameworks have helped by making sure consultants are not forced to deal with EU regulations for every individual project, but finds there are still a lot of barriers to speedily taking projects forward in the public sector.



THERE ARE STILL A LOT OF
BARRIERS TO SPEEDILY TAKING
PROJECTS FORWARD IN THE
PUBLIC SECTOR

*"With frameworks, every time consultants procure, it can take about a year, so you spend a year bidding, you win the work, then you have a year of mobilisation, you then have two years in the 'sweet spot' when you are delivering value but the fourth and final year you are thinking about the re-bid. So it's as if you can never really add value and contribute to society, which is what these frameworks should really bring."*⁸

6. https://constructingexcellence.org.uk/wp-content/uploads/2014/10/rethinking_construction_report.pdf

7. *Building* (2020) 15 Jan. <https://www.building.co.uk/news/next-construction-strategy-will-be-same-as-last-one-warns-previous-author/5103733.article>

8. Conversation with Graham Harle, Sept 2020.

3.4 'GROUPTHINK' AND BUREAUCRATIC REQUIREMENT FOR CERTAINTY

The core dilemma for infrastructure planners is satisfying the demands of both democratic oversight and cost-effective building. The public rightly wants a say, but consultation and planning inquiries can result in compromises that leave the project so watered down that no one is satisfied. As infrastructure becomes increasingly complex and objections to it more multi-issue by the day, will we reach a tipping point?

The key problem is that it is often hard to reconcile national needs with those of local communities.

"It comes down at one level to human nature demanding that complex schemes are developed and brought into service too quickly and that means not enough time is spent on the early stage development," says engineer John Newell.⁹ *"You have this trade-off: bringing infrastructure into use quickly versus risking cost and schedule over runs. Spending more time and money upfront takes longer but means you get it right in the first place. The trouble is that the public is impatient and during that time is not seeing anything for its money."*

Our feeling is that the difficulties of getting major projects built, which – as in the case of airports or nuclear power stations – fall foul of other government commitments on climate change or nuclear proliferation, is a sub-set of the wider number of delayed projects.

In a democracy, there may be good reasons – sometimes on safety, terrorism or environmental grounds – why some projects need to be taken out of the normal process and treated differently. But if we leave things as they are, they never seem to be resolved and there is a danger that these tactics and techniques may spill out and damage routes towards all infrastructure.

3.5 RUNNING THE CONTRACT

Ever since Stone Age Man grasped a flint and began hacking together the rudiments of a shelter, there have been construction risks. Today we read them from digital dashboards – yet our basic ability to get projects up and running to deadline may not be much better than the caveman's.

We may even be going backwards, with productivity moving at the same glacially slow pace in 2021 as it was in 1994. It may be that the engineers soon to be tunnelling alongside Stonehenge will face higher construction risks than the original Salisbury Plain diggers and draggers of 5,000 years ago.

What we may have lost sight of in our rush to embrace technology and digital tools is the unbeatable software that lies under our hard hats. Projects that overrun and miss spending targets may have had every metric tracked – but what they lacked was the human touch. This is the observation of Gleeds' commercial lead Mike Penny, who is on a mission to restore human faith in the construction sector.

9. Conversation with John Newell, Sept 2020.

AN EXPERIENCED EYE SEES
ALMOST IMMEDIATELY IN A
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TO BE DONE

He believes applying a blend of emotional intelligence and business process knowledge to every construction task is crucial to success and that a lack of either, whether it is because people dismiss their importance or they take too long to do, often undermines the success of a project.

His views on the need to balance digitalisation with human input chimes with those of Kees Klap, an international development consultant based in The Netherlands: “It is because of our urge to digitise that we have so many rules nowadays and far more than were necessary in the past. It is because of all these rules, we are losing experienced, skilled and creative managers. We don’t build up intuition and feeling for what must be done.”¹⁰

The problem is, he says, that unnecessary rules are often fed into algorithms capable of producing only an “average” solution, hopelessly inadequate for dealing with what is often a “unique situation.”. Had just one professional cladding expert been present at the Grenfell design meetings, he points out, they could have stepped in to prevent the creation of what turned out to be “a perfect chimney the full length of the building” and the terrible tragedy might never have occurred.

10. conversation with Radix UK, February 2021
11. Conversation with Radix UK, Oct 2020

Klap also backs Penny in believing in the importance of the ‘human element’ in commissioning to avoid “one-size-fits-all” algorithm solutions: “Digitalisation and its associated algorithms produce an average solution for an average question to fit the solution for an average person or company whereas an experienced eye sees almost immediately in a few minutes what has to be done.”

Penny despairs that collaboration fills the lexicons of HR departments and is a headline in every management guru’s manual – yet it remains a skill that is untaught. Many of those in the construction industry need to learn how to construct a human relationship before they turn to anything else.

“The piece that is consistently missing is the human component: how are we genuinely constructing those human relationships because they are the ones that will solve the problem more quickly than any process?”¹¹

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We rely heavily on digital technology to help us become more systematic and efficient, but stepping back and using more human skills as well would help us to get many of today’s complex projects back on track faster.

We already know that human relationships prevent hospital mistakes, for example – so it seems more than likely that organising frameworks that encourage people to solve problems by talking about them will do the same.

He sees the failure of a *'backwards-looking'* systems-based approach in a tendency to benchmark costs by looking at previous similar schemes and *"adding on ten per cent"*.

Even when projects begin to seize up, the knee-jerk reaction is to clamp down with layers of *'hard controls'* such as additional authorisations, expense approvals, reduced delegations or project performance reviews – in an effort to make one or more people accountable. The result is what Penny calls an *"over-reliance on a process system"*.

This, he believes, causes bureaucracy logjams because there is no consensus, no clear chain of approval, and it is no longer clear who has the right to progress projects. In short, a situation, where *"all agree how it should work, but the simple fact is that it doesn't."*

3.6 THE NEED FOR FRIENDLY COLLABORATION OUTSIDE THE PMO TEAM

Management systems such as the PMOs (Project Management Offices) that have been widespread among large construction firms since the early 1990s were well-intentioned *'iron-grip'* systems introduced to slash cost and time overspends by monitoring and logging every measurable component.

Deployed correctly, they serve as an efficient, cost-control mechanism. The problem is that the sheer scale and complexity of today's infrastructure projects means there is a risk that the perspective, integration and *'best value solutions'* they have brought in the past can be lost in projects that undergo upgrading and alterations to tailor them to modern society's ever-changing demands.

Originally designed to keep projects on target by tracking metrics, financial data, resources, procedures and reporting progress to executives and stakeholders, they were to provide a built-in alarm system for clients, flagging up problems with enough time for them to be fixed before they could wreck an entire project.

But all too often they *'take over'*, shunting managers into sidings while they prepare over-complicated reports when they could communicate directly and help find solutions more swiftly.

Penny argues that he has found himself sitting wearily through longwinded PMO meetings where people *"fall into the trap"* of explaining reports it has sometimes taken as long as four weeks to write up and are no longer up to date. He would rather see data kept live, delivered *'cold'* on a dashboard daily, with meetings reserved for debate about forward-looking trend analysis.

Kees Klap laments the removal of skilled engineers from the creation of infrastructure projects the world over and the loss of their “*practical input*” that could save many “*wrong decisions*” being made. Here in the UK, the notion that a formula as self-limiting and arid as the idea that today’s modern ‘*tickboxing*’ could give birth to projects matching the dynamism and creativity of those that arose from the hands of the great British engineering forefathers - Thomas Telford, Isambard Kingdom Brunel or Robert Stephenson – is unthinkable.

Masters of engineering they may have been but they also had skills in leadership and management craft to match. Today their “*can do*” input has been replaced by complex layers of what he calls “*sideway-involved parties*”, which necessitate time-consuming discussion meetings forcing skilled engineers into endless “*activities*” which bring the project no further towards a solution.

“Nowadays engineers are limited or not involved in the management of the project,” he says, comparing it to a hospital operation conducted by lawyers and finance workers or civil servants with surgeons banished from the operating theatre or having little say over procedures.

Penny argues: *“One of the failures of lots of PMOs is that they get the programme report and it says ‘we’ll be behind schedule’ and they spend a week writing all the reasons why they are a week behind schedule instead of just saying to the client: ‘We’re a week behind schedule.’”*¹²

THE IDEA THAT TODAY'S
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The PMO, itself, can sometimes become detached and operate like a factory, having its own life. It starts looking at individual circumstances pertaining to each different part of the project instead of the whole, leading to a lack of overview of the whole development. It becomes a pass-the-parcel organisation and the client gets absorbed into it.

This is where, according to Penny, projects can become too process-driven and the human element lost. The chart goes up on a wall with a timeline, a drumbeat everyone can march to yet there is no independent overviewer offering inspiration and insight where it is needed to avoid pitfalls. Making leadership and experience the source of that inspiration and insight should be the key aim keeping data and process firmly in the role of ‘*support*’.

12. Conversation with Radix UK, Oct 2020.

3.7 THE NEED FOR THE PUBLIC AND POLITICIANS TO UNDERSTAND THE TRUE COSTS OF INFRASTRUCTURE DEVELOPMENT

Warring political factions, however opposed, often tread the same path once in power: they spend on infrastructure. In democracies across the world, pledges to improve people's lives by budgeting generously for transport, energy, water and IT systems, are viewed as vote-winners.

The lure of ribbon-cutting, donning a hard hat and being photographed clutching a trowel – all providing good optics for politicians seeking to present a 'can do' image – remains strong. Yet 80 per cent of big projects globally *"get tripped up by a malevolent hand that hides the true costs and benefits, resulting in massive economic losses to taxpayers and business"*, according to a study by professors Bent Flyvbjerg of Oxford and Cass Sunstein of Harvard universities, who examined more than 2,000.¹³

Politicians willingly champion 'monument building' to buy their place in history, not only failing to grasp the hidden uncertainties and holdups such as the discovery of ancient remains or unexploded wartime bombs, but failing to understand what can realistically be achieved at the price taxpayers are prepared to pay.

"People understand so little about the construction industry," explains Gleeds' chairman Richard Steer.

*"Engineering is the great British invention that goes unnoticed; people take it for granted that roads, sewers, bridges will simply always be there. I don't think people actually absorb the real difficulties of these projects and how there are just so many unknowns at the outset that it's very difficult to get an accurate, finite time for these works."*¹⁴

The disconnect between what politicians and the public believe is achievable and the price they are prepared to pay comes into play in a tendering system which unintentionally incentivises cut-throat, opportunistic behaviours.

CONTRACTORS PUT FORWARD A "POLITICALLY ACCEPTABLE" FIGURE, KNOWING IT TO BE UNREALISTIC

Contractors put forward a *"politically acceptable"* figure, knowing it to be unrealistic but also that they will be halfway through building it by the time the true cost emerges by which time it is too late to halt it.

Those that do budget for unexpected disruption find themselves punished by being undercut – the public find their prices unacceptably high.

"When there is a selected list of bidders, all of an approved ability, the thinking is that whoever comes in with the lowest price should get it. Only lip service is paid to the notion of best value."

13. <https://publications.parliament.uk/pa/cm5801/cmselect/cmpublicadm/125/12505.htm>

14. Conversation with Radix UK, Oct 2020.

This is clearly a problem. Best Value was a concept brought in to avoid precisely this kind of tickbox approach to setting budgets. It is an attempt to improve the delivery and quality of public services and was designed as a moderate and non-confrontational system, based on a balance between quality and price. Yet it can sometimes unintentionally bring bidders into conflict with one another, each trying to drive costs down.

3.8 PUTTING PROJECTS INTO COMMISSION WITH TICKBOX

Anyone searching for an illustration of what a poorly functioning bureaucracy can deliver need look no further than Grenfell Tower. The poor governance that led to the fire in which 72 people lost their lives included missed warnings, shoddy work and a fixation with the cheapest price. Yet boxes were ticked, contracts signed off, approvals given.

This was described to us by one engineer as a consequence of the “need to squeeze the pips out of any project.”

This unintended ‘race-to-the-bottom’ plays out globally, too. Klap finds evidence of a long-established “remarkable sub-culture in the competition for the lowest bid” with “a big part of the government’s efforts being targeted on the lowest bid instead of optimal solutions”.¹⁵

Cutting back on project costs to the extent that there are no margins sewn in if unexpected events occur is a false economy, he argues.

Only with a “sufficient buffer” can unforeseen setbacks be resolved within the contract.

Darren Crocker, an industry insider, considers this a dangerous phenomenon: “There is a real risk that we will end up with a race to the bottom, which creates contractual structures that are more corner-cutting, more adversarial – all of those sorts of negative behaviours that will only impact on project delivery and only increase the risk of high profile failures or catastrophic events.”¹⁶

3.9 CONCLUSIONS

These are the linked issues set out here:

- *Institutions which, in the past drove infrastructure development, are today weakened or removed leaving an institutional void*
- *Cost-benefit analysis is failing us because devices within it make it possible for figures for any project to be manipulated to demonstrate ‘value for money’*
- *The emphasis on selection of bidders has shifted away from professional skill to corporate purpose and social responsibility in a form of questions that are lengthy and complex.*
- *The complexity of modern infrastructure projects means they no longer fit into structures such as PMOs and P13 that were brought in to speed up processes.*

15. Conversation with Radix UK, February 2021

16. Conversation between Darren Crocker and Radix UK, Oct 2020.

- *Mature western democracies necessitate lengthy processes whereby infrastructure can be shaped by the views of a wide range of disparate interest groups, which is time-consuming and can be repetitious.*
- *Carefully-controlled balance of digital technology and human insight is needed to make sure projects succeed. Recognising that the two need to work in harmony alongside each other can bring about powerful transformation.*
- *Industry and government don't always fulfil their duty to explain the true cost of projects. If they did, they could help change perceptions around how infrastructure projects are costed and there would be smoother management of the public's expectations with fewer negative reports where costs inevitably rise.*

In trying to make sure all checks are covered, a tickbox approach can, in fact, incentivise corner-cutting introducing more, not less, risk – and especially to budgets that have to be changed later because they were designed to win bids rather than for accuracy. What many of these issues have in common is a machine-like, tickbox approach which fails to allow for human skills, experience and expertise.

Its purpose is primarily to avoid corruption and cosy relationships which raise prices, but –although it must help avoid corruption – it also introduces a number of new abuses which are potentially just as expensive.

4. TOWARDS SOME SOLUTIONS

“The public sector is the largest client of the construction industry. The task force recommends that the Government commits itself to leading public sector bodies towards becoming best practice clients. We believe that this process must begin with substantial improvements in the way that the public sector procures construction. In our view this can be achieved while still meeting the need for public accountability.”

**Sir John Egan,
Rethinking Construction, 1998**

This section looks at the various solutions to this administrative problem suggested to us.

4.1 SOLVING THE FAILURES OF COMMUNICATIONS

One suggestion implies that a trusted and experienced technical advisor independent of the PMO team could provide a more clear-sighted and holistic view of the operation and steer it back on course, especially when the PMO becomes enmeshed in bureaucratic tangles and finds itself unable to see the wood for the trees.

This could be an additional technical advisor, a trusted right-hand man outside the bureaucratic PMO team, who would help the client to take a broader view and may well be responsible also for communicating with the public.

This is one of a number of proposals for human intermediaries in the system.

4.2 BLURRING THE DIVISION BETWEEN INSIDE THE TEAM AND OUTSIDE IT

First steps would perhaps include a better communication strategy around large national infrastructure projects to improve the public’s understanding of them – then to remove them from the political arena to ensure work on them is not interrupted by changes of government. Some of the larger projects can take an average of 10-15 years to move from the drawing board to becoming operational, whereas a standard parliamentary election term is five years. There are some early signs of this happening with the National Infrastructure Commission.

4.3 PROVIDING ‘PROGRESSIVE ASSURANCE’

THE TYRANNY OF THE WRONG KIND OF BUREAUCRACY LEADS TO A DEFEATIST AND SELF-SABOTAGING MINDSET

The tyranny of the wrong kind of bureaucracy around major infrastructure not only stifles innovation, it leads to a defeatist and self-sabotaging mindset

that views failure as random, unavoidable, allowable and even acceptable.

This wearied cynicism has grown up with old-fashioned *'command and control'* management, with a tickbox mentality to governance delivered at snail's pace in rote procedure with 'B' not daring to budge until 'A' has every single screw and doorknob satisfactorily signed off, while C stands idly by.

One way of dramatically speeding up workflow may be to embrace a concept of flexibility that has become known as *'progressive assurance'*.

The role of assurance is to provide information guiding informed decisions which reduce the causes of project failure keeping it on a path to value for money success. Progressive assurance is a form which applies real-time reporting throughout the life of a project steering a path that avoids conflicts and maximises efficiencies with a streamlining *'check-as-you-go then move on'* system.

The problem for engineers is that, as it stands, the system demands that contractors halt their prices for up to a year so that their proposals can be evaluated - when on a billion pound project, that wait can push costs up as much as four percent.

Progressive assurance has been tried to a small extent. It is intended as the antidote to processes that can only start when the slowest-paced thing catches up. A three-month evaluation process followed by a three-month governance process is not uncommon along with it taking five months to pick three contractors to tender.

4.4 USING THE HUMAN ELEMENT

Combining high-tech with the human touch is probably the best path to success if Britain is to have successful infrastructure that can be built on time and on budget at reduced risk. According to our interviewees, this can be achieved with alignment of interests, open communication, early involvement of key participants at the creation stage and multi-party agreement supporting teamwork that removes barriers instead of raising them.

The idea here is not to replace the processes of central government approval but to humanise it and to share knowledge openly, so that there is no need for an army of bureaucratic *'checkers'* and less reliance on inaccurate assumptions. The data needs to be everybody's.

4.5 TACKLING A FAULTY PUBLIC SECTOR MINDSET AND A NEW KIND OF LEADERSHIP

Construction is among the most costly and risky industries. Nerve-wrackingly big and difficult decisions on projects involving vast sums of public money have to be taken. Yet educational institutions and construction firms continue to churn out managers who are highly skilled, but sometimes overcautious. It is, many believe, the industry's next crisis. The same is true of civil servants.

EDUCATIONAL
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The leadership skill can and should be taught, plus good decision-making under pressure. Unfortunately, some leaders don't get taught leadership and you can rise as an expert to quite a high position where you have to make some fairly big decisions without really having necessarily learned how to do that. The danger is that you can end up, as the Peruvian government has with their \$5 billion infrastructure programme following the devastating rainfall of the El Nino climate cycle in 2017, with an 'overly-controlled' and litigious system where nobody is prepared to take responsibility, where – in an effort to combat corruption – every word of every line of every document is scrutinised.

We need to build a balanced system, that has sufficient checks and balances to make the process open and transparent, but without stopping people's ability to function efficiently.

4.6 USING PROJECT 13

When productivity in the construction industry sank to rock bottom levels in the early 1990s, research sponsored by civil engineers and their clients vowed to find solutions for the sector's systemic failings – and transform the way it worked.

The result was the mysterious-sounding 'Project 13', which earned its name when it fulfilled its target of turning around thirteen different projects. Today it has been hailed a success by early adopters, elevated to a 'philosophy', spoken of as being a powerful 'mindset' and heralded as creating: *"a more highly skilled workforce and infrastructure that represents better value for all."*¹⁷

The culture of self-interest and blame it seeks to replace grew up in the 1980s after much of the UK's economic infrastructure was transferred to the private sector. Contracts between disparate groups were set up, often piecemeal and in isolation, with consultants designing projects and operators outsourcing technical skills and falling back on market forces to determine price by competitive tender.

The lack of co-ordination often led to a simplistic short-termism and underestimation of risk: exactly the kind of over-optimistic price-tagging that inevitably leads to ruthless cost-cutting.

17. *ICG chairman Dale Evans, speaking in July <https://www.yorkshirewater.com/news-media/2020/yorkshire-water-joins-collaborative-project-13-framework/>

Instead of buck-passing and squabbles, P13 sets out five core roles (owners, investors, integrators, advisors and suppliers) and gets them working together from the outset as an integrated team to get a single view of users' needs. It benchmarks the whole-life performance of an asset and rewards outcomes rather than volume of work done.

If the team is collaborating smoothly, P13 argues, it takes time out of the programme by integrating design and building and reducing schedule risk. It can mean clearer communication with the public possibly cutting out some of the endless stop-start rounds of objections since suppliers can pool skills and experience to decide whether changes to the plans called for by objectors are feasible.

The trouble is that P13 still fails to tackle the root of the problem for either contractors or consultants, because they still have to get onto the preferred supply list in the first place. It is all about delivery, not how we get people to a position of delivery.

4.7 TACKLING COMMISSIONING AND COST-BENEFIT ANALYSIS

Large national infrastructure projects are unfailingly gift-wrapped in glossy brochures touting high-quality engineering skills and can seem irresistible to politicians and the public.

The problem is that the economic modelling in them can be weak, poorly understood and is therefore not questioned, but taken as gospel.

This has been shown by research carried out by Professor Thijssen, who finds that, rather than confront uncertainty and recognise how it affects decision-making, people like the “*vener of controllability*” the brochures give them.

“We need to have to have a more honest discussion between the engineers and politicians and between communities as a whole; not pretend that these kinds of valuations live in isolation, that you do them only once from the comfort of your desk,” argues Thijssen.¹⁸ *“A constant dialogue is probably much more fruitful. There is no magic bullet but there could be improvement. It is not in politicians’ interest to look for nuance and find balance because they have to take a decision then defend it to the hilt, never apologising for fear that the next morning’s headlines will say ‘Screeching U-turn’. I think that we, as voters, are in that sense as much to blame as politicians because they are reacting in a way that keeps us happy and that makes for very bad policy making and we are looking for a certainty that can’t be given.”*

18. Conversation with Radix UK, Oct 2020.

4.8 TESTING OUT IRISH-STYLE PEOPLE'S COLLABORATIVE ASSEMBLIES

One way of bringing about more honest communication between engineers, politicians and communities on large national infrastructure projects would be to set up citizens' assemblies of the kind established in Ireland in 2016 to consider urgent political questions.

Ordinary citizens are randomly selected to serve on the assemblies to create a body that reflects society and in Ireland, they have been suggested as a deliberative way to find solutions to climate change, the housing crisis, the health crisis and what to do about a Dublin mayor.

4.9 DEVOLVING POWER

One answer may lie in beefing up existing local government institutions rather than creating huge, new centralised ones.

Professor Ian Wray told us that the best way to do this would be to decentralise the government machine and break England up into three or four provinces with a secretary of state and block budget on the Scottish model leaving Whitehall to international affairs and the overall economic co-ordination.

It would be a radical plan, not too far removed from the de-centralisation necessitated after the war, when large swathes of the country were flattened by Hitler's bombs. The situation is different but, with debt triggered by Covid-19 hitting wartime levels and businesses reporting devastating losses, such measures might be needed if we are to plan our way out of the crisis.

5. SOME TENTATIVE RECOMMENDATIONS

“If you look at the history of UK strategic planning, you find more strategic planning going on in the town hall by Manchester’s chief executive than you would ever find going on inside a Whitehall department. That reflects the whole history of British big planning in the sense that the state seems to find it very, very difficult to take initiatives and follow them through; strategic direction comes from outside and below. If we want to have more effective long-term strategic planning, we are going to have to strengthen institutions outside of central government, effectively returning the levels of power and discretion enjoyed by its motorway building county council engineers in the 1960s.”

Professor Ian Wray,
author of Great British Plans

Our task here has been to make a brief list of various difficulties with infrastructure planning and decision-making as experienced by leading executives at one major UK engineering company, and some academics. One major theme emerges, however: the way in which decisions get delayed because of the failure of decision-making processes to use the human element.

By ‘*human element*’, we mean those essentially human skills that allow us to sum up situations and people, to make things happen, and to jolly systems along.



WE NEED BOTH HUMAN SKILLS, AS WELL AS THE ABILITY TO USE DIGITAL TOOLS TO SUPPORT THE CREATION OF EFFICIENCIES AND INNOVATIVE APPROACHES

Human skills make all the difference to otherwise legalistic processes – as long as they don’t interfere with the reasons why those processes are legalistic: that it is believed to be the best method of avoiding corruption or cronyism. The answer here is not a contradiction – we need both human skills, as well as the ability to use digital tools to support the creation of efficiencies and innovative approaches.

Our decision-making processes in the UK have been criticised for their inflexibility. In practice, it is clear that some element of assurance needs to be inflexible but these decisions should not be taking months. Otherwise, it will lead to the least careful companies getting the contracts, and other perverse outcomes. This would represent the apotheosis of an alien American legal culture, which allows no leeway, and of American-style New Public Management.

The existence of these overwhelming processes seems to have persuaded Whitehall officials that no human involvement will be required. It has consequently dulled their ability to take decisions at all. Taking responsibility for decisions unnerves them, all the way to the top.

Clearly, the techniques behind Project 13 and 'progressive assurance' deserve to be more widely adopted inside Whitehall. We also need to put the blame squarely where it belongs, on failures of decision-making inside central government. This is not something they can shuffle off to local government. In fact, the recent planning white paper seems to continue this same theme of blaming local government for failings at the centre. We did hear complaints about the slow decision-making of local planners, but they were dwarfed by the difficulties UK engineering companies now find with the ponderous pace of central government departments.

In both these cases – both government proposals to systematise local planning, and the failure of central government to take timely decisions on infrastructure processes – make the same fundamental mistakes: it is a kind of tickbox fantasy shared at the top of government that they need to remove all human decision-making, and that this kind of inflexibility will lead to faster, smoother decisions.

We do not agree. All infrastructure planning involves decisions about competing and complex factors. No process can escape this, either on policy or specifics or the issues about whether

they accord with each other. That is why we suggest the following broad approaches towards a solution...

I. Ferment a change of culture in Whitehall, including no-fault management and leadership training, to encourage faster decision-making.

This would apply equally to existing civil servants and to those who are in training. We would recommend a partnership between the First Division Association and military or naval staff training colleges. We would also need to make sure that local officials are trained, funded and geared up to take faster decisions, but we believe that this would filter down from central government if it could be inculcated there.

II. Take the most controversial decisions elsewhere - on airports or nuclear energy for example - out of the normal processes, which they tend to corrode. It may be time to test out the Irish-style consultative assembly idea.

III. Put senior engineers into government departments, like a Chief Scientific Officer at the Cabinet Office. Their task would be to provide a roving interaction with the engineering world, to speed decision-making – and with the status of independent reviewers to report every year. One of their other tasks would be to avoid a cosy, clubbable approach – which Whitehall clearly fears – by identifying new engineers and bringing in new companies.

IV. Set up a royal commission on cost-benefit analysis and its use in government. The system has been under sustained attack since the 1990s, and perhaps since the 1960s and its failure to 'measure' a decision on the third London airport.

V. Tackle the problem of sharing data, by loosening intellectual property regulations around construction projects to encourage and take the fear out of it – perhaps by making it a condition of tendering that everyone shared data and knowledge with others involved in construction. We also propose that the Government should experiment with taking pricing off the agenda – that bidders will be told what the government is prepared to pay, so that their ideas become the basis of any decision.

VI. Organise a public information campaign about the importance of engineering in our national life. Perhaps we need a version of the new Natural History GCSE proposed to interest secondary school pupil awareness of the environment so that more pupils consider studying engineering and every one of them has at least some understanding of how a bridge or airport is built.

VII. Set out a planning land use framework on the lines of Scotland and Wales, to agree priorities for infrastructure, agriculture, trees, nature and sustainability – aware that some land can have multiple uses. This can then be interpreted by local representatives, together with training on the speed of decisions. It would avoid, for example, situations where large housing developments are still built without a single solar panel, while next door – even by the same developer – we have hundreds of acres of arable farmland covered by photovoltaic cells.

APPENDIX

Gleeds Interviewees

Richard Steer

Chairman

Graham Harle

Chief Executive Officer

John Newell

Non-Executive Director

Mike Penny

Country Manager, Gleeds del Peru (SAC)

David Radford-Wilson

Commercial Director UKDT –
Peru Reconstruction Programme

Martin Smalley

Senior Director

Others

Darren Crocker

Jacco Thijssen

Professor of Finance at York University

Ian Wray

Visiting Professor and
Fellow of the Heseltine Institute at
Liverpool University

Special thanks to

Kees Klap

Kees Klap is an internationally renowned civil engineer with over 40 years of experience. He has worked for governments and contractors on large and complex infrastructure projects and has been involved developing leading (inter)national building codes. Kees is based in The Netherlands.

TICKBOX INFRASTRUCTURE

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ISBN (ePub) 978-1-912880-36-2

Radix Brand and Layout:
Mark Huddleston - talktohuddy.com

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Published in May 2021
by Radix Group Ltd
www.radixuk.org



“IT WE WANT TO HAVE
MORE EFFECTIVE LONG
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CENTRAL GOVERNMENT,
RETURNING THE LEVELS
OF POWER ENJOYED BY
MOTORWAY BUILDING
COUNTY COUNCIL ENGINEERS
ENJOYED IN THE 1960S.”

PROF IAN WRAY

RADIX



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