

NISKANEN C E N T E R

THE PROBLEM FACTORY: Preemptive risk aversion in infrastructure planning and the role of professional services

By Dan Davies

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About the Author

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*“Let’s play a little game here ... Let’s all get up and stretch. Now everybody who is trying to get this deal done, go to this end of the room. Everyone who is trying to f*** this thing up, go to that end of the room.”*

Enron executive John Wing, quoted in *The Smartest Guys In The Room*,
by Elhaney & McClain

Introduction

In a small site of special scientific interest about 20 miles northwest of Oxford, a “shed” is being built. Or at least, that was how Jon Thompson, the chief executive of the High Speed 2 (HS2) rail project, described the Sheephouse Wood Bat Protection Structure. This is actually a series of arches linked by wire mesh which will run for one kilometer along the route of the railway and (it is hoped) prevent a colony of endangered Bechstein’s bats from being hit by the trains as they fly between their roost in the woods and neighbouring foraging grounds.

The “bat shed” became the subject of media controversy in 2024 when (at a panel session at the Rail Industry Association annual conference¹, discussing cost overruns) Thompson revealed that it, alone, had added £100 million to the bill. It makes a useful starting point for discussing a general question of costs in infrastructure, not just in the UK but in many countries with a similar economic and legal structure. Why do things like the Sheephouse Wood Bat Mitigation Structure seem to happen so often?

More to the point, why do they appear to particularly afflict the common law countries? The UK is a particularly strong example of the problems of planning sclerosis, because it has both a very clear need for large infrastructure investment (to replace longstanding fixed assets of Victorian or postwar vintage), along with a poor track record of delivering them (between 2012 and 2024, the time to gain consent for a project under the National Strategic Infrastructure Program (NSIP) grew from an average of 2.6 years to an average of 4.2 years).² But it is not alone. A recent Boston Consulting Group survey³ indicates a clear geographical shape to the distribution of cost efficiency; the UK stands in a group with Australia, Ireland, and the USA, with much higher unit costs than France, Germany, and Spain for many kinds of infrastructure projects, particularly those related to transport and power generation. It can be noted that these are often “linear”⁴ projects, which stretch out spatially and tend to cover multiple local government areas, which suggests that the problem is likely to be one of governance and political structure rather than economics or geography.

1. Gwyn Topham. “Cost of ‘Bat Shed’ to Protect Colony Near HS2 Has Topped £100m, Chair Says.” The Guardian, November 7, 2024. Subsequent news reports have revised the cost upward to £120m.

2. “Nationally Significant Infrastructure: Action Plan for Reforms to the Planning Process.” Government of the United Kingdom, February 23, 2023.

3. Raoul Ruparel et. al. “Reshaping British Infrastructure: Global Lessons to Improve Project Delivery.” Boston Consulting Group, February 7, 2024.

4. “By their nature linear projects will interact with larger numbers of interested parties and affected persons than a single-site piece of infrastructure. The geography means that they will also pass through different environments and administrative boundaries and affect different communities.” From “Nationally Significant Infrastructure Projects.” Government of the United Kingdom, February 27, 2025.

In attempting to explain the higher costs of infrastructure in Anglosphere countries, this paper takes the following new approaches:

- Taking seriously the problem that infrastructure permissioning is an *adversarial* process, in which objections are *manufactured* rather than discovered. This means that some kinds of solution to the problem (those which might be described as based on a “lump of NIMBYism fallacy,” after the “lump of labor” fallacy that assumes a fixed amount of work) are much less likely to succeed.
- Related to this, taking a *cybernetic* perspective alongside the political economy view. The cybernetic perspective (in the sense of Norbert Wiener’s 1948 book on “Control and Communication”⁵) emphasises the importance of feedback loops, information, and control. This allows for synergistic relationships between systems and institutions, which do not necessarily follow conventional patterns of interest and incentives and which may create outcomes which nobody intended.⁶

The paper is structured as follows. Section 1 sets out two models of planning failure – a conventional analysis based on an excellent recent essay in the “deregulatory” tradition, and a more cybernetic model which focuses on the processes by which planning objections are created. Section 2 extends the cybernetic analysis by introducing the concept of “preemptive risk aversion” and relating it to the nature of the process through which permission is granted. It argues that the root of sclerosis in infrastructure procurement is the fact that while cost-benefit analysis takes place on something close to an expected-value basis, the actual planning has to provide not for the expectation, but for relatively improbable downside risks.

Section 3 extends this analysis by looking at the nature of the “risk surface” itself, and the way that the information environment for infrastructure developers is created. This involves looking in greater depth at the industrial organisation of the planning industry, and in particular at the role of the legal and professional services sector. Finally, Section 4 recaps and summarizes the argument, before making some policy suggestions to mitigate the kind of problems discussed.

This perspective allows a comparison to be made between the quasi-judicial approach to planning permissioning in the common law countries, and a European approach that might be termed “corporatist”,⁷ in terms of greater state involvement in the entire planning process. This active role means that the relationship between the project developer and the planning system is closer and more integrated; developers have a more stable set of relationships, which allows for deeper and richer communication links. This different information environment means that developers in a corporatist system face a different risk surface and easier tradeoffs. Effectively, “planning” bears something closer to its ordinary language meaning, rather than being a euphemism for “giving or withholding permission.”

And this raises a potentially uncomfortable paradox; in most other contexts, corporatism is considered to be a source of sclerosis in European economies, not a method of managing it. The smaller and more neutral administrative state in the Anglosphere countries usually allows greater flexibility and dynamism – even the

5. Norbert Wiener. *Cybernetics: Control and Communication in the Animal and the Machine*. (Cambridge, MA, MIT Press, 1948).

6. I discuss the general phenomenon of systems creating outcomes not intended by any individuals at length in *The Unaccountability Machine* (London, Profile Books, 2024).

7. Although this paper argues that the European approach follows this model, it is not exclusively European. The practice of coordinated rulemaking between government and large firms was common in the American New Deal. JK Galbraith’s writings on “technostructure” even anticipated that it might be a peculiarly American form of organization.

large and diverse professional services industry is usually considered to be a strength rather than a weakness. Infrastructure may be a special case.

This means that solutions are not going to be easy – it is not really credible to say that a single sector should, alone, be moved to an entirely different model of political economy. The cybernetic analysis helps here, by emphasizing that part of the problem is caused by information bottlenecks in the permissioning process which the corporatist model is able to route around. Placing more capacity inside the planning authorities (and potentially making it easier to move expertise and manpower between private and public sectors) could help, but, unfortunately, cheap, silver-bullet deregulatory solutions will not.

I The nature of the problem

The bat shed example is only one of a number of similar iconic stories, many with a media friendly nickname, illustrating a situation where a seemingly minor objection has prevented the construction of a vital infrastructure project (or at least greatly inflated its cost). The Hinkley Point C nuclear power station has been delayed due to problems with an “Acoustic Fish Deterrent,”⁸ for example. In some of these cases, closer analysis might suggest that things have been slightly exaggerated, or that a convenient scapegoat has been found.⁹

There is a genuine structural problem, but recognizing this is barely the beginning of the first step toward solving it. Rather than a blanket assertion that the whole system is broken, it is necessary to start from a position of “respect for the problem.” This means, first, to look at the detailed institutional structure and develop a theory of which specific parts of the system are causing the delays and cost inflation. And second, to understand how these pathological aspects fit into the wider system; the relationships, incentives, and synergies which preserve and reproduce the problems. The very first step in analyzing a system is to understand that it *is* a system, which means it has an equilibrium state and responds to feedback.

The 2024 essay “Foundations”¹⁰ (by Ben Southwood, Samuel Hughes and Sam Bowman) ably set out the scale of the problem, and made a strong case that sclerosis in the planning system was a main cause of economic stagnation for the UK. It diagnosed an imbalance in the system, which placed too much weight on objections, failed to proportionately weigh costs against benefits and incentivized “blocking” behaviour; the familiar “NIMBY” model. Among the solutions suggested were to reduce the scope of judicial review, to allow more “offsetting” of environmental damage rather than specific mitigations like the bat shed, and to adjust the framework of incentives by allowing local communities to benefit from planning gain.

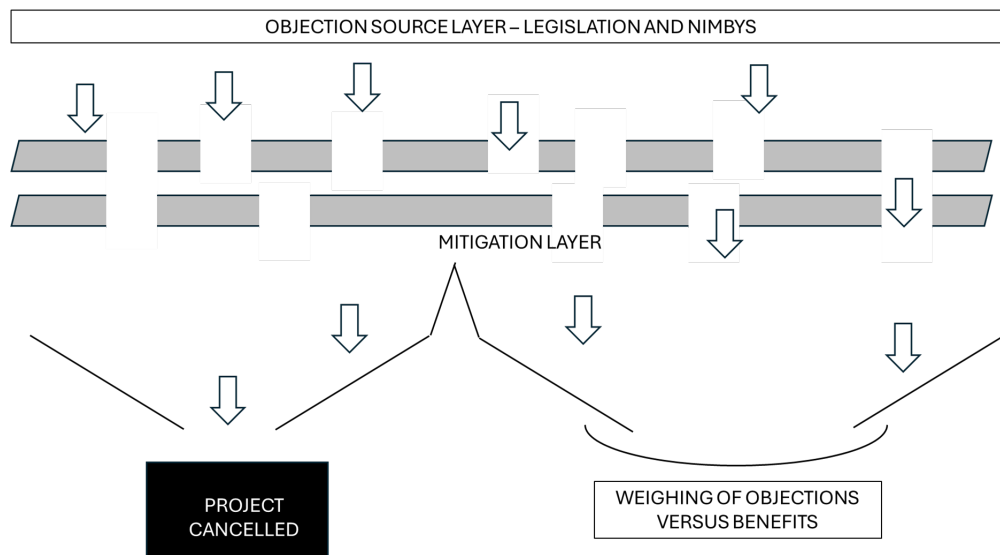
These ideas are all working in the right area, and many of them are likely to have a role in any solution. The underlying analysis, however, seems to implicitly assume that objections to infrastructure projects are exogenously generated. The environmental and other regulations provide a source of raw material for people who oppose development for whatever reason, and this raw material is thrown at the development process in the attempt to derail it.

8. Informally and perhaps inevitably known as the “fish disco.” From Rachel Millard & Jim Pickard. [“‘Fish Disco’ Row Risks Fresh Delays to Hinkley Point Nuclear Plant.”](#) Financial Times, February 26, 2025.

9. An example here might be of the Wylfa Newydd nuclear power station in North Wales, the abandonment of which has variously been blamed on Arctic terns and the Welsh language, rather than the failure of the government to reach a financial agreement with the developers on the energy output.

10. Ben Southwood, Samuel Hughes, & Sam Bowman. [“Foundations: Why Britain Has Stagnated.”](#) September 20, 2024.

Fig. 1: The “Swiss cheese” model of objections and planning



As the diagram above shows, this is analogous to the “Swiss cheese”¹¹ model of industrial accidents. Developers attempt to mitigate as many of the objections as possible, and particularly to mitigate those which cannot be “weighed” against benefits. The permissioning process is simply a matter of counting the objections which got through the mitigation screens and checking to see if any of them are “show-stoppers” like endangered species. If there are no such uncompensatable issues, the remaining costs are weighed against the benefits and the decision emerges.

In this analysis, “sclerosis” refers to the fact that too much Swiss cheese is needed – developers have to spend too much time and effort on meeting objections. A related problem of “blocking” exists because too many objections have the property that they cannot be weighed against benefits. The policy levers are the number and type of permissible objections (determined by the regulations), the weights given to different kinds of costs and benefits in the planning system (determined by policy and guidance), and the ability of some objections to torpedo the entire project (determined by legislation). Pulling the levers in one direction requires the infrastructure developers to spend more time and effort on mitigation screens and increases the risk; pushing them in the other direction has the opposite effect.

All these quantities are basically fixed properties of the system in the short term, which can be moved to different values by legislation in the medium term. The quantity of objections falling into the system can be reduced or expanded by changing environmental protection regulations, but it does not respond to other changes in the system. Either bats are protected, or they are not; either their protection can be offset by contributions elsewhere or it cannot. Consequently, the analysis is that the policy levers have been moved too far in one direction, and need to be reset.

However, policy measures of this sort have a long track record of disappointment. Despite many successive rounds of attempts to speed up the planning process for infrastructure projects, it has gotten slower and

11. James Reason. *Human Error* (Cambridge, UK, Cambridge University Press, 1991).

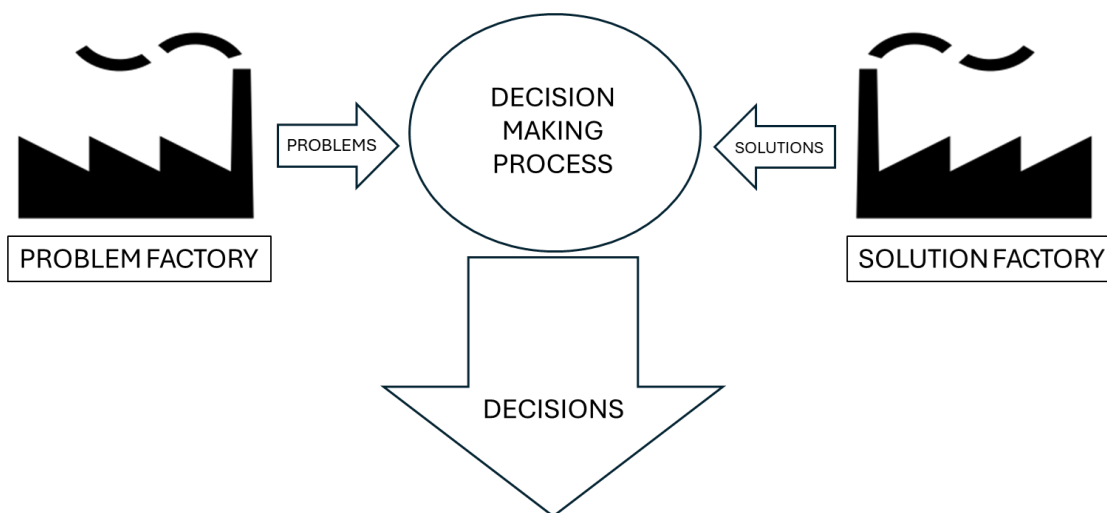
more expensive. And the gradually worsening sclerosis of the system does not appear to be particularly well correlated with the introduction of new environmental protections, or indeed with revisions to the system aimed at making infrastructure planning easier.

Table 1: Legislation affecting UK infrastructure planning

Town and Country Planning Act 1990	Superseded and amended the 1947 Act, introducing a distinction between forward planning and development control.
Planning and Compensation Act 1991	Introduced the “plan led system”, requiring the creation of development plans, with criteria for judging new permissions.
Environment Act 1995	Created the Environment Agency and introduced the assessment of environmental impact as a requirement for planning consent.
Town and Country Planning Regulations 1999	Formalized the environmental assessment criteria into the Environmental Impact Statement.
Planning and Compulsory Purchase Act 2004	Amended the plan-led system and allowed major infrastructure projects to be approved by the Secretary of State.
Planning Act 2008	Created the Nationally Significant Infrastructure Project category and introduced National Policy Statements. Created the Infrastructure Planning Commission to make planning decisions on NSIPs.
Localism Act 2011	Abolished the Infrastructure Planning Commission and gave approvals back to the Secretary of State. Introduced a legal requirement for pre-application consultation.
Infrastructure Act 2015	Introduced “deemed discharge” if local authorities did not file objections within a time limit. Created the Highways Agency.

An alternative model might be to say that the system is more similar to that shown in the diagram below; the inputs to the planning process on both the benefit and cost sides are *industrial products*. NIMBY objections do not come from a fixed supply objectively determined by the relevant regulations; they are part of the output of the professional services industry.

Fig. 2: The “Problem factory / Solution factory” model of objections and planning

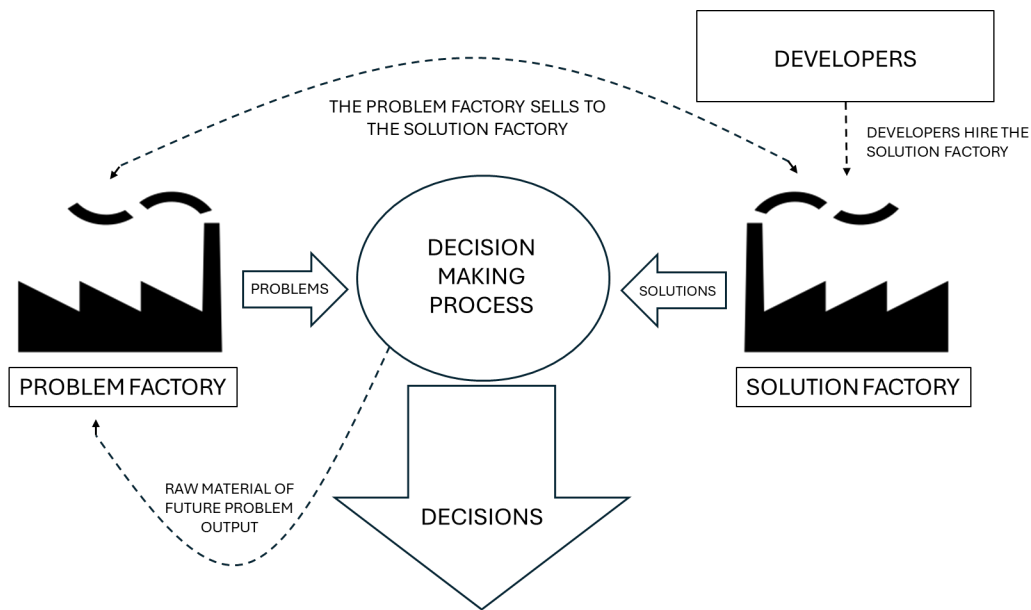


Taking this view helps to explain why deregulatory approaches do not seem to work. As long as there are *any* environmental or other planning regulations at all, they can be shaped into objections. The relevant constraint is not the number of clauses in the law; it is the ingenuity and industry of the people who apply that law to particular cases.

It is also important, however, to understand the industrial organization of the planning objection industry. Figure 2 above is misleading in one very important regard, to the extent that it suggests that the “problem factory” and the “solution factory” are separate operations working in opposition to one another to supply costs and benefits for the decision making process to analyse. In fact, the relationship is much closer and more complicated and synergistic. A case can be made (as in section 3 below) that while it is not quite accurate to say that “the cost factory is owned by the benefit factory,” it is not wholly inaccurate, either.

In many cases, not only are the same professional services firms producing both costs and benefits in their analyses, but the production of objections is actually being paid for by developers, in order to preemptively refute or mitigate them. A revised version of Figure 2 might show the flow of information between the two, and also the flow of financial resources.

Fig. 3: A more complete representation of the “Problem factory” model



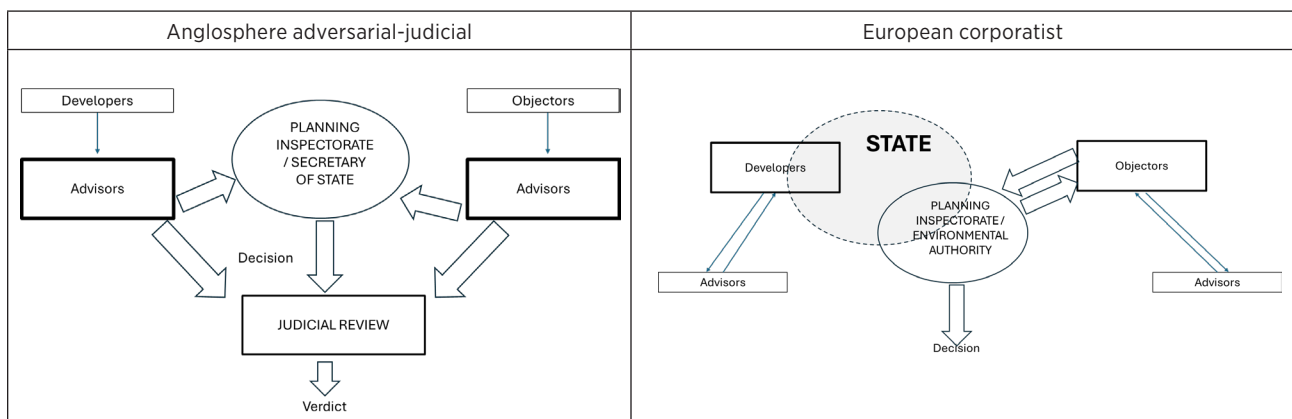
How could this structure be maintained? Why would the infrastructure development industry finance the production of objections to its own projects? The answer to these questions are found in the structure of the decision-making system.

II Preemptive compliance and risk aversion

Anglosphere systems tend to follow a “judicial” model for planning decisions.¹² In this kind of model, the planning bodies act as neutral arbiters between conflicting interests of developers and objectors; this is backed up by actual judicial review of decisions. The relationship between the decision-makers is at arms’ length, governed by conflict-of-interest policies. The European system, by contrast, might be described as “corporatist”, in that the relationship between the project developer and the planning system is closer and more integrated, because the state takes a more active role.

In the diagrams below illustrating the difference between the two models, the arrows show that information flows between developers and the planning authorities in a judicial system happen in the same way as those between objectors and the authorities, and are mediated by professional advisors for the most part. It is also necessary to include actual judicial review in the diagram, to emphasise that nearly all of the upstream interactions happen “in the shadow of the law,” as they are expected to end up in evidence bundles. Contrasting this is the corporatist system; rather than an arrow denoting information flows with a defined point of entry and exit from institutional boundaries, the state encompasses both the infrastructure developers and large parts of the consultation and planning process. Advisors play a less important role, and the flow of information between consultees and objecting parties is two-way; more akin to an “investigating magistrate” than a common law judiciary.

Fig. 4. Information flows in the two systems



Effectively, “planning” in a corporatist system bears something closer to its ordinary-language meaning, rather than being a euphemism for “giving or withholding permission” (albeit sometimes in the context of a higher-level plan). Rather than a neutral referee between objectors and developers, the state is part of the relationship; the permissioning system has more fluid boundaries because it is involved in a tripartite relationship trading off developer interests, the rights of affected parties, and public policy goals. This contrasts to the Anglosphere system, in which public policy is only represented to the extent that it forms part of the legal framework. (In fact, in many cases in the UK, the National Policy Statements governing infrastructure have themselves been used as sources of objections to specific projects).¹³

12. “Making planning casework decisions is a quasi-judicial process, and planning ministers must ensure that they decide cases fairly, are impartial between the parties, and are seen to be fair and impartial in order to avoid any appearance of bias.” In [“Guidance on Planning Propriety: Planning Casework Decisions.”](#) Government of the United Kingdom, December 16, 2021.

13. For example, see: Spurrier, R, [\(On the Application Of\) vs. The Secretary of State for Transport](#), [2019] EWHC 1070 (Admin), in which the policy on airports was challenged by groups objecting to the planned third runway at Heathrow. This challenge to the policy statement was eventually dismissed, but established a precedent that National Policy Statements were subject to judicial review and injected considerable delay into the project, a theme which will recur in discussions below.

These two models also differ greatly with respect to whether the majority of the information-processing capability in the system is located inside or outside the organizational perimeter of the decision making body. For a British infrastructure project, for example, the “Examining Authority” will typically consist of two or three planning inspectors (but it may be as many as five or as few as one). Such a small unit cannot act other than on a judicial basis; the capacity is not there to engage in any meaningful way with the engineering or environmental questions directly, or to carry out original research. Instead, the decision makers take their information inputs pre-processed, in the form of reports compiled by the interested parties to submit in evidence.

European planning authorities tend to have more capability. The French planning system for large infrastructure projects, for example, begins with public consultation organised by the Commission Nationale de Debat Public (CNDP). This official body has 25 commissioners, supported by a permanent staff of 14 and around 300 “collaborators” in regional government.¹⁴ These resources are available at a stage which would correspond to “pre-application” in the UK process. This is the stage at which the developer is meant to inform the public (and statutory consultees) about its plans, advertise, and make an initial collection of public objections and issues to include in its Environmental Impact Statement.

In the UK system and that of most Anglosphere countries, there is no official involvement at this stage at all (as no application has yet been made). In fact, as noted above, the planning authorities tend to try to avoid answering “hypothetical” questions at this stage, mainly to forestall any accusations of having prejudged an issue which could be later raised at judicial review. In fact, the UK’s Planning Inspectorate has a policy (the “Section 51 Conflict Policy”) that any inspector who has provided any technical advice at any earlier stage of a project cannot be considered for inclusion on the panel making the decision.

This greater degree of involvement extends further into the decision making process in European systems. The Autorité environnementale in France provides detailed reports of its own as an input into the CNDP consultation process (rather than simply taking the consultation as an input), and provides feedback and suggestions to developers at every stage. The Netherlands Commission for Environmental Assessment has 350 “independent experts working on a case-by-case basis,” solely responsible for environmental impact assessments.

It should be noted at this stage that the diagrams in Figure 4 are meant to represent information flows and boundaries, not necessarily institutional structures and industrial organisation. In fact, much of the work on the ground in European systems is carried out by professional services firms and consultancies; every planning authority has the same issues of intermittent demand which make it economically sensible to maintain a core full-time professional staff supplemented as needed by external contractors. However, in the European system, the contractors are inside the information perimeter of the decision-making body; they communicate as colleagues and as part of the same team, rather than through reports and deliverables. Taking this cybernetic “information-centered perspective” clarifies a particular problem in the Anglosphere system; the decision making process is *opaque*, in the sense that there is little opportunity to identify ahead of time which factors might prove decisive. And this insight can be confirmed with real world examples. The Hinckley Rail Freight Interchange¹⁵, for example, is a highly necessary piece of transport infrastruc-

14. “[Organisation de la CNDP](#).” Commission Nationale du Débat Public, February 24, 2025.

15. The Examining Authority’s report recommending refusal of consent is available here: Robert Jackson, Graham Sword, Matthew Heron. “[Hinckley National Rail Freight Interchange: Examining Authority’s Report of Findings and Conclusion and Recommendation to the Secretary of State for Transport](#).” The Planning Inspectorate of the United Kingdom, June 10, 2024.

ture. It was acknowledged to have very significant benefits as part of the national policy for transport networks, which offset an extensive list of negative factors relating to noise and loss of green space. However, the examining authority found that changes to traffic patterns in a nearby village might increase the risk of pedestrian accidents (at a particular stretch of narrow road where two trucks could not pass without mounting a curb), and that a six-meter high acoustic barrier placed at the edge of a campsite of what in the UK is known as a Gypsy/Traveller community would be overbearing. Each of these two objections (plus the failure to commission sufficient research on the consequences for traffic flows at a motorway junction) would have independently been enough for the examiners to recommend refusing consent, according to the report of the planning authority.

With the benefit of hindsight these problems are apparent – safety and impact on protected characteristics are among the issues which cannot be weighted, and the traffic flows were clearly material information. However, *ex ante* it would have been extremely difficult to say that these were the key problems with building a railway loading yard in Leicestershire. There is no indication that the developers were taking a calculated risk, and they had ample professional advice. Looking at contemporary reports in the trade press¹⁶ it appears that the decision came as a surprise, and that it reinforced the perception that planning inquiries are a lottery, where the best one can do is try to anticipate as many risks as possible.

And “anticipating as many risks as possible” is where the problem of sclerosis starts. The opacity of the decision-making process interacts in a particularly problematic way with the workflow of the permission system. When consent is withheld in a quasi-judicial system, the process is close to coming to an end. There might be some possibility of an appeal or judicial review brought by the developer, and in some cases of extremely high policy priority, the ultimate decision-maker might be persuaded to issue a “minded to refuse” letter rather than a verdict. But the central case would be that if the inquiry results in a refusal the project is over, and would need to start again at the first consultation stages to be revived. Developers cannot plan on the basis that they will have an opportunity to “cure” problems revealed at the decision stage, and the nature of the quasi-judicial process is that, for reasons of both capacity and the need to preserve the appearance of neutrality at any potential judicial review, the planning system is not set up to give opinions on hypotheticals or to advise on choices of mitigation methods.¹⁷

This kind of risk – very high stakes and very low visibility of probabilities – is extremely difficult to manage and consequently extremely unattractive to private-sector investors and developers. It creates a tendency to attempt to “bulletproof” infrastructure projects. Rather than an expected net present value approach, the costing of large infrastructure projects is a process of casting the net wide to define a “risk surface” covering all possible issues which might present a probability above some threshold value of derailing the project, then spending as much as needed to mitigate those risks below the threshold value. And since almost any possible objection or issue could (with unknown and unknowable probability) be the reason for an entire project to fail, almost no potential issue is ignorable, and any expense spent on mitigating the risks is likely to look like value for money. To put it simply, £100 million is an expensive way to protect a colony of 30 bats, but a reasonably cheap way to protect a £65 billion railway.

It should be emphasized at this stage that it is the *size* of the risk which appears to motivate developers, rather than the probability of a negative outcome. Infrastructure developers face a large undiversifiable risk,

16. “[Rail Freight Project in the Midlands Under Threat](#).” Railway Supply, September 12, 2024.

17. There are minor exceptions which prove the rule - examining authorities will occasionally make suggestions as to how consent orders could be given conditionally. These are not common enough for developers to be able to rely on them, however.

and consequently do not manage their risks on the basis of expected value; they attempt to minimize the absolute risk of a calamitous outcome. In fact, in the UK, the official authority recommends the granting of consent in the vast majority of cases — including six projects where consent was granted against the examiners’ recommendation, the Nationally Significant Infrastructure Project system has a 95 percent acceptance rate.¹⁸ And although around a quarter of infrastructure consent orders have been subject to judicial review, there have so far only been four successful claims in court. It might be argued, in fact, that this very high success rate is itself evidence of over-engineering.

This suggests an important interim conclusion — that a focus on NIMBYs and judicial review risks missing the action. Both are more important as a threat rather than as a real obstacle; the process takes place “in the shadow of the law,” but to a large extent it also takes place “in the shadow of NIMBYs.” In order to deal with planning sclerosis by deregulation alone, one would need to reduce environmental regulation¹⁹ so far that the entire risk surface of possible objections was brought below the threshold value at which developers’ risk aversion is triggered. This seems impractical – it would likely involve dismantling protections which people would really notice to the point of political unsustainability, would probably involve breaking international treaties,²⁰ and would most likely be a bad idea anyway.²¹ Reducing the risk of judicial review to below the threshold would be difficult; in a common-law system, it is not easy to stop people from bringing court cases when they believe a tort has been committed against them, or to make litigation predictable or easy. Unfortunately, many of the measures proposed over the years by reports like the aforementioned “Foundations” operate on changing probabilities and expected values, while the underlying problem is not one of marginal effect.

Solutions which respect the problem, then, need to look at the risk surface itself. Why is it so large, and why does it appear to be growing? The answer to this question may be found in the industrial organisation of the planning system – the reality that the problem factory mainly sells its output to the solution factory.

18. This figure is for projects which were “eventually approved”, and includes some where the delays caused by legal challenge and judicial review were substantial. See “[Getting Great Britain Building Again: Speeding Up Infrastructure Delivery](#),” Government of the United Kingdom, November 22, 2023.

19. Taking the word “environmental” in the very broad sense used in British planning contexts; as well as hydrology, geology, biodiversity, noise and habitat preservation it can include heritage impact, views, noise pollution and even effects on marine archaeological sites.

20. “For so long as the UK remains a member of the Aarhus Convention, there is no case for amending the rules in relation to cost caps in order to reduce the number of challenges to NSIPs.” In Lord Banner KC. “[Independent Review Into Legal Challenges Against Nationally Significant Infrastructure Projects](#),” Government of the United Kingdom, October 28, 2024.

21. “Project Nutcracker” outlines the conflict between planning reform proposals and other policy goals; for example specifically with respect to the Habitat Regulations and the “bat shed.” See Catherine Howard. “[Project Nutcracker: Bat Shed Crazy - Can Starmar Really Bulldoze the Environmental Blockers to Growth?](#)” Herbert Smith Freehills, December 18, 2024.

III The industrial organization of the planning system

The developers of HS2 did not want to build the Sheephouse Woods structure; their perception was that it was a design mitigation which was forced on them. The environmental regulators deny having made any specific requirements and claim that they only approved the final design. The planning inspectors did not commission a £100 million shed either. And yet one was built. Whose idea was it?

This question has a straightforward factual answer at the simplest level. The development consortium apparently proposed and analyzed 17 different options (with multiple variations on each) before concluding that the “Bat Structure” was the one which would satisfy the design criteria. According to the CEO of the project, each analysis involved “lawyers and the environmental specialists and hydrologists and so on and so forth” and cost “hundreds of thousands of pounds.”

In other words, most of the costly activity – all of the interim decision-making, the consideration of options, the running up of bills and delay – appears to have taken place entirely in the private sector. Things which a naive observer might have naturally presumed to have been part of the public sector and civil society planning system (and which do in fact happen under the control of the planning authority in corporatist systems) were in fact carried out more or less independently by a network of small- and medium-sized professional services businesses. These are the “the lawyers and the environmental specialists and hydrologists and so on and so forth” referred to in Jon Thompson’s speech.

This part of the planning system often goes unnoticed in official documentation, as applications are made in the name of the developer and adjudicated by an authority, with the professional and legal advisors usually only credited in footnotes and introductions, if at all. However, it is where much of the necessary work takes place in taking all sorts of raw information and bringing it to a place (and in a form) where it can be the basis for decision making. This is not just true of physical and scientific information; there are also consultancy firms to handle and manage the consultation process, arranging public meetings and advertising and then summarizing the responses, meaning that they also shape the political facts relating to a planning decision.

Although they tend to be obscured in the official record, professional services firms are businesses that need to advertise. By looking at the case reviews, white papers, news updates and thought-leadership pieces²² published on the websites of the larger law firms, civil engineering firms, and public relations consultancies, we can see how “the environmental impact assessment community”²³ works to both shape the decision-making process of infrastructure permissioning, and to determine the kinds of decisions that the system is called upon to make. By looking through this secondary literature generated by the practitioner community, it is possible to see how this part of the system works.

One important factor which becomes apparent quickly in looking through the marketing material is that in this area as in many others, the professional services industry is as much “industry” as “professional” in terms of the kinds of advice it produces. A great deal of the sales effort appears to be devoted to standard-

22. The term of art for white papers and research used in a commercial context is “content marketing”. For example, see [Emma Marketing](#), where an agency showcases its work helping Mainer Group, one of the leading environmental consultancy firms, develop a strategy including “content marketing” to achieve “an ambitious goal to double the size of their business within three years”.

23. This evocative description comes from Mark Burrage & Danielle King. “[Climate Change and Environment Impact Assessments \(EIA\): Unpacking the EIA Regulations \(2017\)](#).” RSK Group, March 3, 2020.

ized, reproducible products; software solutions and generic report templates.²⁴ It also becomes clear quite quickly that the majority of marketing effort is directed at developers; this is fundamentally a business-to-business industry. Finally, it also becomes apparent that the consultants and lawyers work by jointly marketing problems and solutions.

For example, in 2024 the “Finch Case²⁵” (a UK Supreme Court judgment on the expansion of an oil well project near Gatwick Airport) established that environmental impact reports for infrastructure projects might need to consider “downstream” carbon emissions associated with the project in use, rather than just those involved in their construction. Very soon after, all the UK’s top planning law practices quickly published reactions, case studies and blog posts.²⁶ Some of these suggested that the precedent was likely to be restricted to energy projects (both hydrocarbons and green energy projects, as negative downstream emissions might need to be taken into account for a refusal). Others suggested that the precedent could cover all kinds of infrastructure, including transport projects. There appeared to be a range of opinions about the extent to which downstream effects are already taken into account – many road projects already include the emissions associated with additional car use in their environmental assessments.

However, a common theme was that the relevant question was not so much about what projects could or could not be carried out as a result of this precedent, or even the likelihood of getting permission. Rather, the professional community appeared to see the consequences of the Finch Case mainly in terms of another implicit requirement for documentation. Whatever their views on the scope and applications of the case, most lawyers tended to conclude that decision makers would henceforth need to show evidence that downstream issues have been considered, and either give evidence of having included them in the decision process or cogent reasons that there was no need to do so. The barrister who acted for the successful objectors in the Finch case summarised²⁷ the state of play by saying that “the EIA Regulations remain focused on process and public participation, not outcome” and that “downstream GHG emissions will need to be assessed for all projects where the causal test is met and where such emissions are capable of assessment.”

This assessment is particularly interesting when seen in the context of a piece of promotional literature from the UK’s largest environmental consultancy. Four years before the Finch Case, RSK Group published a document in its “Insights” series entitled “Climate change and environment impact assessments (EIA): Unpicking the EIA regulations (2017).”²⁸ The regulations in question were the UK implementation of the European Directive on which the Finch verdict was based, and in context, the suggestion in the first paragraph of this document that the new rules “have provided the EIA community with new tools to make its voice heard” seems quite prophetic.

In their discussion of the EIA regulations, the RSK authors not only laid out a set of potential additional

24. This appears to be a recurring source of complaints from clients of the industry on both sides of the planning decision. In a review of the local authority process, planners commented that “The prevalence of cut and paste is a big issue for SA/SEA produced by external consultants, it’s a case of ‘spot the other authority’s name’ ... Reports are generic – so where is the value?” From Shelly Rouse. [“Barriers and Challenges for Environmental Assessment.”](#) Planning Advisory Service, January 2023.

25. [R \(On the Application of Finch on Behalf of the Weald Action Group\) \(Appellant\) v. Surrey County Council and Others \(Respondents\)](#), UKSC/2022/0064, 2022.

26. For example, see Matthew Fraser. [“Finch and Other Recent Case Law on ‘Indirect Effects.’”](#) Landmark Chambers, 2022. Or, Cat-Greenworth Smith et. al. [“Supreme Court Judgment in Finch - Overview of the Decision and Its Implications.”](#) Freshfields, August 23, 2024.

27. Ruchi Parekh. [“How Are We to Assess Downstream Climate Impacts Post-Finch?”](#) The Planner, August 12, 2024.

28. Mark Burrage & Danielle King. [“Climate Change and Environment Impact Assessments \(EIA\): Unpacking the EIA Regulations \(2017\).”](#) RSK Group, March 3, 2020.

risks to be taken into account with respect to climate impact and planning, but discussed their own company's products and solutions:

Our approach includes appointing a climate change coordinator and adopting a climate projection following the UK Climate Projections. RSK's climate change coordinator will ensure that climate change is consistently considered through the impact assessment and design process.

They go on to discuss the migration of climate risk into the planning process in terms which would be familiar to marketers discussing the positioning and launch of a new product:

Our experience has been mixed, as regulators, technical specialists, designers and clients vary significantly in their responses. Clients and designers already respond to a wide range of environmental drivers, and it is not always clear that adding climate change to the design development process is an improvement.

And conclude on an equally prophetic note:

Finally, the complexity of climate change often makes considering it disproportionate for all but the largest developments. This is arguably the most difficult issue to address because the various ways that climate change is considered dictate that analysing the issue is neither simple nor quick. Rather, it risks developing environmental statements that are overly long and cumbersome.

In other words, once it has implicitly been agreed that the priority in infrastructure development is to minimize the risk of catastrophe, further action comes about as the result of a synergy between developers, lawyers and consultants. Lawyers are professionally inclined (and in many cases, may see themselves as professionally required) to present their clients with the maximum degree of legal certainty possible. Consultants and other service providers take their lead by translating the legal requirements into schemes of work and necessary reports and research. And at every stage, each piece of work and delay appears to be cheap at the price if it can provide insurance against another possible means for the entire project to be cancelled.

When a new ground for objection appears in the space, it is hard to tell *ex ante* whether it is serious or not. Because the planning authorities have limited capacity, they cannot indicate ahead of time how they feel about it, and to forestall future judicial review, they will usually feel a need to demonstrate that they have at least considered it before rejection. The new ground is now a "risk," in the sense that developers do not know whether it will be given significant weight or regarded as a reason for refusal.

At no stage in this process are any of the major actors likely to feel that they have a genuine choice as to what to do. Lawyers cannot ignore new precedents; they need to inform their clients and potential clients. The planning authorities are institutionally averse to losing judicial reviews, and so they consider all the objections placed before them. Objectors to planning, in an adversarial system, are unlikely to leave any potential weapons on the ground. Developers need to maximise the chances of carrying through a viable infrastructure project. The professional and scientific services firms are literally doing their job. So, the risk surface expands. Apart from the objectors, everyone involved is trying to help, but the final, systemic and predictable consequence of their actions is the gradual sclerosis of the system.²⁹

29. This kind of outcome is extremely common in complex systems; the management theorist Stafford Beer coined the phrase "the purpose of a system is what it does", to highlight the fact that the interaction of multiple organisational units can often produced equilibrium states which are very different from those intended by any of the component subsystems. From Stafford Beer. *Diagnosing the System for Organisations* (Hoboken, NJ, Wiley Press, 1985).

And the production of new possible grounds for objection is a byproduct of the system itself; every legal precedent and every new project is bound to raise issues which may have more general application. One point which needs to be emphasised at this stage, as it has been previously, is that close analysis of the system reveals that objectors of every kind – NIMBYs, environmentalists, local authorities and everyone else – have surprisingly little agency in most projects, although their occasional victories like the Finch Case become highly significant. The main market for planning objections is not planning objectors; it is infrastructure developers.³⁰ This is a product whose consumers buy it not because they want or need it but because they feel like they have to.

30. Even when planning objectors commission work from consultants, developers are still the main purchasers. In one motorway planning case, an “alternative route” proposed by the group of objectors in a 16 page report required dozens of professional studies to refute not only the proposal made, but to demonstrate that no reasonable variation on it could work. See “[M4 Corridor Around Newport: Appraisal of Objectors’ Alternative Blue Route Proposals](#).” Government of Wales, December 2016.

IV Summary and conclusions

Before moving on to conclusions and potential policy solutions, it makes sense to summarise the overall shape of the argument. It appears that the relationship between the permissioning system and infrastructure developers in the UK and other common law countries is affected by a synergistic interaction with the legal and professional services firms which provide the information-processing capacity for both sides. In summary, the nature of that relationship is:

- The permissioning authorities have restricted capacity in terms of the information inputs they can handle.
 - This means that their decisions are made in a judicial/adversarial form, delivering a yes/no decision on a completed draft planning consent
 - Partly for reasons of capacity, and partly for reasons of legal propriety and the need to avoid the appearance of prejudgement, they are not set up to enter into detailed conversations in the interim or to comment on hypotheticals.
 - Their main sources of information are pre-processed reports, which are assembled by the developers from commissioned works of professional services firms.
- Decisions are subject to judicial review, which reviews questions of whether process was followed and whether decisions were reached for cogent reasons rather addressing the merits of the decision.
 - This means that a paper trail has to be created to demonstrate the chain of reasoning.
 - It also means that no objection can be ignored, even in cases where objections are being raised on strategic grounds or in bad faith.
 - It is hard to predict ex ante from outside whether an objection might be the basis of successful judicial review.
- There is little opportunity to “cure” adverse decisions, as neither the judicial system nor the planning system is set up to provide sufficient analysis of its decisions or to suggest positive alternatives when permission is refused.
 - Therefore, the development of infrastructure is very subject to “low probability, large impact” risks from the planning system.
 - The only way to manage these risks is to commission more work and to try to cover the whole “risk surface” of possible objections
 - “Pre-emptive risk aversion” leads to delay and over-engineered solutions
- The business model of the professional and legal services industry tends to constantly expand the risk surface.
 - Consultancy firms work by creating productised generic solutions and then marketing them.
 - There is a common community of practice, including developers, consultants and specialist lawyers. Law firms act as vectors of communication through this system, spreading knowledge of the latest developments.

- It is impossible to advertise the solution without “advertising the problem”. As legal precedents are set or technology advances, developers’ risk aversion always inclines them to commission more work.
- Professional services firms have, by an order of magnitude, more information-handling capacity than other parts of the system
 - In other words, the part of the system which generates complexity is much larger than any of the parts which are meant to deal with it.
 - No other part of the system is reliably in a position to gainsay a professional report, other than by commissioning another professional report.
 - This feeds back to the initial problem of missing capacity at the centre of the permissioning system, as it ensures that the complexity of planning applications is so large that the decision making bodies cannot operate other than on a judicial/adversarial model.

Unlike many other analyses of the infrastructure planning sclerosis problem, it can be seen that this does not depend on any particular aspect of environmental licensing or biodiversity protection. It only weakly depends on the organisation of NIMBYs or other groups of objectors. Although the institution of judicial review is important to the model, it is not particularly sensitive to the precise arrangements and does not depend on judicial review frequently rejecting projects. In our view, this is a strength of the model rather than a weakness. This view of the problem predicts that as long as there are any legal constraints on the planning process at all, the results will not change; this is a homeostatic system, which tends to find its way back to equilibrium when disturbed by attempts at a policy solution. As long as there are sufficient objections and judicial reviews to keep the threat credible, risk aversion will do the rest.

If this is right, there are a number of testable predictions, in the sense that solutions to the infrastructure sclerosis problem which do not take the true underlying model into account will tend to fail in predictable ways. For example, one solution from the “Swiss cheese” model of objections might be to reduce the potential supply of grounds for objection by reducing the extent of environmental protection, or by instituting national and local plans, to provide guidance to the planning authority as to what issues should be given weight, and what might constitute grounds for refusal.

This kind of solution is likely to have disappointing results (and indeed, the “problem factory” model was partly formulated to explain the disappointment so far), because objections are part of the system rather than external hazards. The plans have always tended either to be so complicated that navigating them is itself a source of uncertainty and delay, or so simple that they leave large ambiguities and uncovered areas. Not only are projects challenged under judicial review as inconsistent with the National Policy Planning Statement or Local Plan, the plans themselves have regularly been the object of challenge³¹. It is not possible to match the variety of possible cases with a document which is itself of manageable size.

Because of this, the question of fitting a particular case into the general categories will itself require a decision, which is subject to challenge in the same way as any other planning decision. Deciding whether procedural requirements have been followed involves similar amounts of time and effort to those required to

31. The Landmark Chambers presentation “Objections to DCOs” devotes its first six slides to discussing objections to National Policy Statements, particularly in the energy sector where it can be argued that they are inconsistent with Net Zero targets and international treaty law. See Alex Goodman. “[Objections to DCOs](#).” Landmark Chambers, October 1, 2019.

decide the original question on the merits³². For this reason, any attempt to shift the balance away from NIMBYs by changing the rules of procedure is bound to fail in its goal of reducing the amount of risk and paperwork.

The model also suggests that there are problems with “brute force” solutions, based on instructing planning authorities (and potentially some of the statutory consultees like local authorities and regulatory bodies) to promote growth in their decisions. There is, in fact, no obvious problem in the UK with respect to objections being given excessively high weight compared to benefits (and if there was, the final decision rests with the elected minister anyway). The problem of pre-emptive risk aversion relates much more to the dangers posed by matters which cannot be weighted – grounds for refusal, which are for the most part based in statute (or in rights derived from international treaties; the protection of the Gypsy/Traveller encampment near the Hinckley Rail Freight Interchange was based in the European Convention on Human Rights). Putting pressure on planning bodies is, if the “problem factory” model is correct, simply likely to result in more judicial reviews and an increase in the currently very low proportion of projects quashed at this stage. Since it does not affect the risk surface materially, and does not decrease the uncertainty, this kind of measure is unlikely to prevent future bat sheds.

For as long as there are *any* environmental, heritage or other grounds for refusal, they are likely to be used. Trying to come up with a silver bullet to stop only frivolous objections while allowing genuine review and good faith consultation is a forlorn hope; bad actors and strategic manoeuvres do not identify themselves on their face, and the job of distinguishing them from legitimate ones is neither more nor less than the whole point of the planning process. Measures which try to find a quick way around this problem are going against the grain of the system. At best, reforms of this sort might help to stop so many of the court system’s own capacity problems from spilling into planning.

As argued above, part of the problem is related to the capacity of the planning inspectors, which creates a bottleneck in the flow of information and causes the uncertainty on which pre-emptive risk aversion is based. This bottleneck exists because of the organisational boundary between the part of the system responsible for making decisions and the part responsible for gathering information. The lack of resources on one side of the bottleneck appears to be the cause (as it is what makes the adversarial/judicial model necessary), but the real problem is the bottleneck itself, and the imbalance between the two sides.

Corporatist systems solve this by having a much larger public sector decision making body, with more internal resources and more ability to commission professional studies for itself, as well as having more stable relationships and better communication links (mediated via the state) between the planning and development sides. Reproducing this in an Anglosphere context is difficult. Simply expanding the staffing of a body like the UK Planning Inspectorate to something more similar to the French *Autorité environnementale* would most likely not produce the same results, even if sufficient skilled labour could be found to do so. The amount of capacity dedicated to producing problems and expanding the risk surface is much greater, and furthermore, the same problems of constrained decision making and consequent risk aversion may show up at the later stage of judicial review.

A solution is needed which works with the grain of the Anglosphere economies, rather than simply importing one element of another system. The creation of a “regime outlier”, like the Veterans’ Administration

32. This often shows up as an issue in judicial reviews in the form of “rolled up” hearings, where both sides agree that a single set of hearings will decide both whether the application for judicial review should be allowed to go forward, and the substantive issue if it should.

within the US medical system or the highly de-regulated market for professional soccer players within EU labour regulation is difficult to do on purpose. Taking inspiration from information theory and management cybernetics, as well as Erin Metz McDonnell's work on pockets of bureaucratic efficiency³³ and Malcolm Sparrow's writing on the structured use of regulatory problem-solving³⁴ suggests a way forward, however. Success is likely to mean attacking the problem at its source; the boundary between the decision makers and the information gatherers.

Rather than commissioning reports for submission to an examining authority, infrastructure developers could be charged cost recovery for the authority to hire its own professional services firms (as does the Commission for Environmental Assessment in the Netherlands), freeing up capacity for the planning inspectors to engage in more two-way dialogue. This could be combined with much greater use of secondments from the private sector to the public sector, allowing the decision making body to build up institutional knowledge³⁵ of the developing "risk surface" of objections, and to be part of the network of communication with the community of practice.

Perhaps surprisingly, addressing the systemic problems of the decision making process at the first stage might mean that the overhanging problem of judicial review would largely solve itself. A fundamental principle of judicial review is that the courts do not second-guess the decision itself unless it was manifestly illogical (in the sense that it was one that no reasonable body could have taken, not a merely bad decision) or corrupt. Judicial review is focused on issues of process. This means that if the first stage of decision-making is itself quasi-judicial, a review tends to replicate the whole thing, but if the planning authority works in a collaborative fashion with two-way communication, there is much less scope to do so.

Large infrastructure projects will never be easy; they tend by their nature to create diffuse benefits and focused costs, and there is always the incentive for those who are negatively affected to act strategically³⁶ in order to grasp any veto points they have. This problem is by no means fully solved in the corporatist systems. However, the Anglosphere system exacerbates the difficulties by driving an intrinsically adversarial problem through an adversarial decision-making process, while maximising the uncertainty of the eventual outcome. This is not merely a story of NIMBYs against builders; it is a complex outcome of an overall system. It deserves to be taken seriously.

33. Erin Metz McDonnell. *Patchwork Leviathan* (Princeton, NJ, Princeton University Press, 2020).

34. Malcolm K. Sparrow. *The Regulatory Craft* (Washington, D.C., Brookings Institution Press, 2000).

35. A comparison might be made here to the extensive use of secondments made by many tax authorities, which appears to help create an institutional base of understanding of avoidance schemes along with informal channels of communication.

36. This appears to have been partly what happened with respect to the bat shed; cheaper solutions were ruled out because of objections (including the late filing of Tree Protection Orders) by Buckinghamshire County Council, which has been opposed to the entire HS2 project from its inception.

Annex – The problem of professional services

The analysis above suggests that, paradoxically, one of the great weaknesses of the UK and other Anglosphere economies – slow and expensive infrastructure procurement – is closely linked to one of its great strengths – a vibrant and productive professional services industry. This link bears some closer examination. Might it be the case, as a cynic might put it, that the reason that infrastructure projects are so slow is that so many of the people involved are charging by the hour?

It definitely looks as if there is a problem of incentive compatibility. A large amount of the cost of planning sclerosis is, identically as a matter of double-entry bookkeeping, the revenue of law firms and consultancies. As shown above, these companies are managed on commercial lines, they advertise and have growth targets; one of the largest producers of environmental impact reports in the United Kingdom is currently in year two of a three-year plan to double its revenue. And, to the greatest extent, it appears that these businesses do the work which determines the size of the risk surface, and the amount of time and expense needed in order to reduce the risk of planning failure below an acceptable threshold.

Given this, it is hard to read warnings about the danger of excessively long and cumbersome impact statements without some suspicion of disingenuousness, particularly after one has seen the structure of white papers, blog posts, and case reviews in which these warnings appear described as “content marketing” by a professional business development consultancy. Although there is no reason to doubt the sincerity of the individual people involved, they have annual objectives and billable hours targets like the rest of their industry.

However, the problem may be deeper than that. Although at the global level, it might be seen as obvious that there is a conflict of interest between the “problem factory” and the “solution factory,” this is not so clear at the level of the individual project. On any given working day, it is unlikely that anyone³⁷ in the community of practice responsible for the problems outlined in this paper sees themselves as working for the problem factory.

Rather, the subjective experience is more like working for the quality control and risk management department of the solution factory. Professional advisors retained by infrastructure developers share the goal of risk reduction. They are not exposed to the same commercial risks, as their billings are not contingent on the project being approved, but professional standards and ethics would point in the same direction as their own incentives; to assist their client by alerting them to risks and suggesting solutions to mitigate them.

This suggests that the solution is not to be found in treating professional advisors as a new species of NIMBY. The crux is in the risk management problem itself, which means that it relates to the uncertainty and opacity of the decision-making system. In order to ignore some kinds of risk, there needs to be a way to make those risks acceptable and quantifiable; so long as they remain “unknown-unknowns,” professional and legal ethics will always point in the direction of treating them in line with the worst case scenario.

37. Apart from the small minority of legal practices who specialise in representing groups of objectors and protestors.