Pain and pleasure in planning

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Greater use of digital models and data will open planning decision-making to more people and make developments responsive to local wishes, argues Rosemarie Andrews

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I first imagined a digital interface for the planning system at the same time I realised that building information modelling (BIM) was going to be the future of the way we work as architects. It is like imagining an olive tree in the garden, or an extension to the house: once you have visualised it, all you see is the space where it should be.

Looking at the planning system from the perspective of a BIM workflow, the application process simply seems to be a digitised version of the pre-digital system, where PDFs are printed and measured with a scale rule and parameters are written out as statements.

The need for change

Change is necessary because:

- building designs are increasingly produced in BIM
- planning applications are processed in an outdated digital form
- the interpretation of line drawings requires judgement
- much of the current process consists of risk management
- an interface with BIM could reduce risk, help decision-making and speed up the process.

The government strategy document Digital Built Britain: Level 3 Building Information Modelling ? Strategic Plan , published in February 2015, seeks to enable e-planning and e-regulation as part of BIM level 3A. We need to get there by bringing together city models, smart cities, GIS and BIM, making data the basis of communication, planning and decision-making.

The devolution of the planning system with the replacement of most central policy by the National Planning Policy Framework (NPPF) in 2012 set the scene for change. The guidance requires that local authorities use data-based evidence, and directs plan-makers to the Office for National Statistics (ONS) , the source of open data. What the plan-makers are lacking is an analytical interface with which to interpret that data easily.

Three planning applications

The first step is to analyse the current decision-making process. I therefore took 3 planning applications and examined the officer?s recommendations and committee decisions. I looked at what they were deciding, what they needed to know in preparation, and how they approached the decisions.

The current system is complicated. To assess a planning application, an officer must assimilate and evaluate a lot of information, the interpretation of which requires judgement; with judgement comes risk, which needs verification by experts, and much of the system is about managing this.

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The officer then advises a planning committee, which represents the view of the community. However, the committee is drawn from a narrow set of the community ? that is, those who choose to stand as councillors. They have no expertise in planning other than taking a 1 day course on the subject, and the community has not selected them for their views on architecture.

Communities and councillors are required to debate their interpretation of drawings, but have a limited vocabulary of planning and architectural terms. This leads to a discussion in analogies and simplistic terms such as 'flat roof', with emotive associations appearing to cloud perception. There is thus a degree of opacity in the planning process between the designer and the community.

Four types of decision

I dissected every policy, letter, report and decision statement from these cases, filtering them according to the type of decision being made and whether it was a measurement, a relationship, a judgement verified by expert opinion or a reaction. I found 4 basic types of decision (see Figure 1).

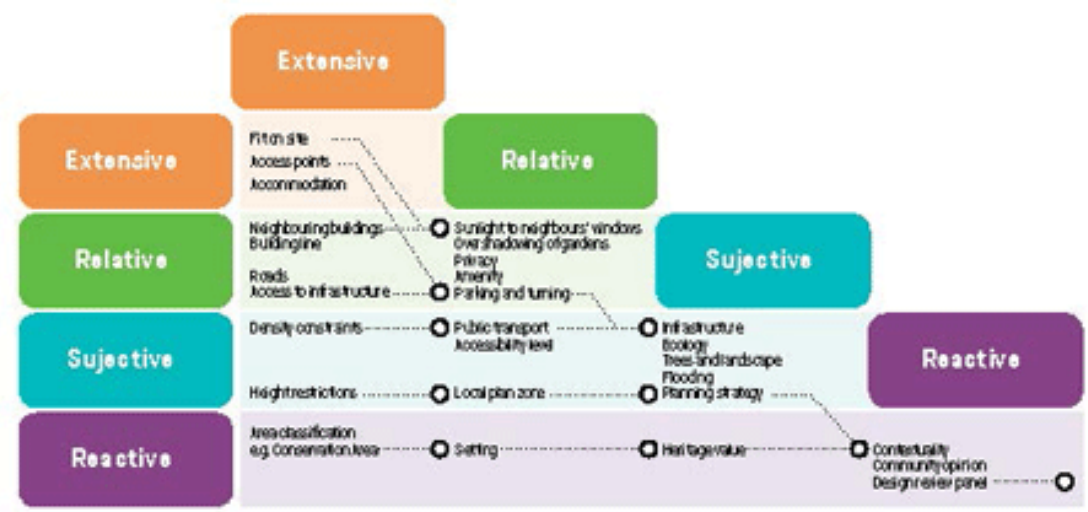

Figure 1. Four types of decision

1. Extensive: a 'yes or no' assessment of fit, access, size, density and the physical

relationship of the proposal to its surroundings.
2. Relative: measurement of the proposal?s relationship to the physical environment, to neighbouring buildings and to infrastructure.
3. Subjective: subject to strategic policy or requiring an expert opinion; for instance, where proposals concern newt and bat populations, expert verification is needed.
4. Reactive: the reaction of people and their emotive response, taking account of opinions or judgements about design quality or context.

These 4 types can be divided into 2 clear sets (see Figure 2): the extensive and relative decision types use measurement procedures that are quantifiable and can be checked in a model, while the subjective and reactive criteria require human assessment, which can be assisted by viewing the model.

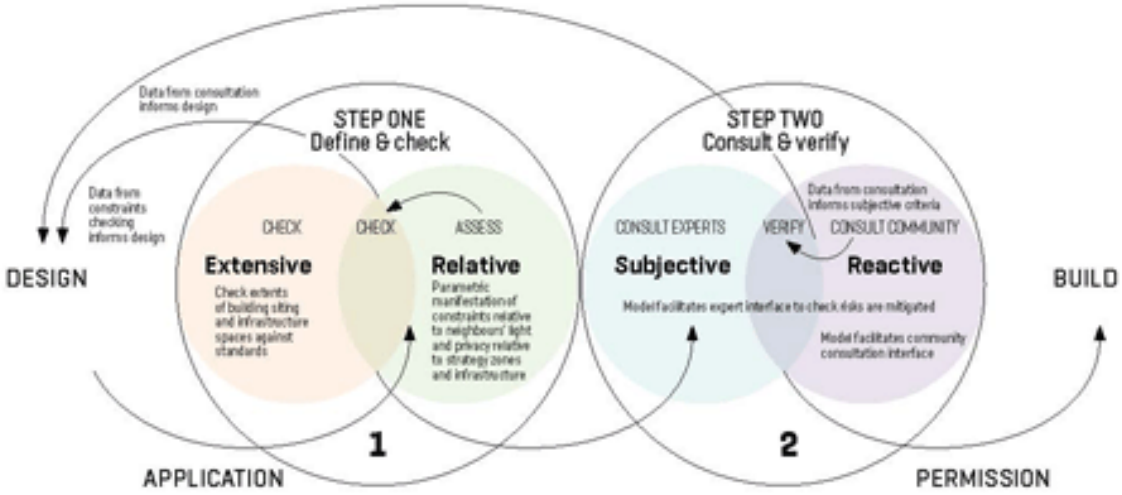

Figure 2. The 2 steps of a proposal and how they are related

Imagine that the local authority had a city model hosted on an online platform and designers could link to this so their design could evolve in the context of the model. With algorithmic representation of local plan policy constraints as zones in this model, a proposal?s fulfilment of criteria such as space and daylight standards can be assessed.

The local authority need only verify that the constraints defined are correct for the city model, not for every application. The designer could hone the design to best fit the brief and the planning policy, and the application would only be submitted when its compliance is confirmed.

The second stage of the 2 stage process is consultation using the model?s interfaces, with expert consultation to ensure that subjective criteria are satisfied, risks are mitigated and the proposal will cause no harm. Are there protected species indicated in the locality requiring an ecologist?s study? Or does GIS data suggest this is a traffic blackspot requiring a report to verify safety? Finally, is the community pleased by the proposal? The reactive set of criteria will give you insight.

A cohesive, bottom-up system can support developments that please people the most.

Appropriate development is more likely to be retained, offers better long-term value and is more sustainable

Many existing interfaces can be adapted as a platform for community engagement, including smartphone apps and games engines, as well as advertising on social media rather than lamp posts. This will be more representative and direct than a committee and will help collaboration with communities. Community views are themselves data, they are geographic and cumulative, so the process needs to remain agile and receptive to this input.

I have outlined how we can make the planning process less painful. Now we can measure the pleasure, creating a live evidence base that can link directly to the local plan. This way, its criteria better represent local desires. When you look at a potential site, you can access this data and find like-minded neighbours; places where innovation is accepted attract more innovation, with the potential for more diversity.

How can local plans remain responsive?

- Data from each application will become part of the evidence base, including reactions from the community.
- The data attached to the local plan will evolve through this input to be more representative of the local community, leading to local distinctiveness that encompasses the desires of a wider spectrum of people in that community for innovation, sustainability and efficiency as well as for conservation.

Do we have the tools?

Software is available for the foundation of our new process, and if we are clear in our strategy, further digital means will develop. There are many software packages currently available that support explorable 3D representations, such as Esri City Engine , and data is available for download in Esri format from the ONS website, while VU.CITY is generating 3D models of all major cities in the UK from aerial photography. Some councils have already commissioned local models.

There is also powerful analytics software such as Tableau that can process open data from the ONS easily into informative graphic information. We can likewise link GIS data evidence to our local plan models, and use parametric tools to help us design within constraints. It is not about evolving tools; rather, it is about changing the way that people approach decisions.

I am advocating an evolutionary system that cumulatively assimilates data so local plans can become more distinctive. A cohesive, bottom-up system can support developments that please people the most. Appropriate development is more likely to be retained, offers better long-term value and is more sustainable. These are the key requirements of the NPPF: to let the people back into planning and achieve sustainable development.

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Further information

- Related competencies include: Legal/regulatory compliance , Planning
- This feature was taken from the RICS Land journal (June/July 2018)
- Related categories include: Planning