

# Demolition Machines: Making and Thinking with Databases of Urban Regeneration

Tom Keene

# DEMOLITION MACHINES: MAKING AND THINKING WITH DATABASES OF URBAN REGENERATION

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Cressingham Gardens Estate (henceforth Cressingham) is a green and leafy social housing estate based in South West London that is owned by Lambeth Council (henceforth Lambeth). The estate has a low crime rate and is well liked by the majority of residents. I purchased my leasehold home on Cressingham in 2006 and currently live there with my wife and two young children. In 2015, Lambeth cabinet members voted to demolish Cressingham as part of their (now) £1.6 billion borough-wide program of urban regeneration.<sup>1</sup>

In 2012, Lambeth housing officers (henceforth officers) began consultation meetings with residents and commented that 'the database told us Cressingham is too expensive to repair'. This comment inspired my PhD research project *Database (e)State* that investigates the role of Lambeth's housing databases in the maintenance, repair, and regeneration of their housing stock. This ongoing project and thesis provides the basis of this essay.<sup>2</sup>

I undertake acts of making, programming, activism, and theoretical and technical research in order to address the complexities of urban regeneration. These acts combine into strategies that highlight and influence the ways that Lambeth produces knowledge of Cressingham and then acts on its buildings and residents. I created one strategy, the *Service Charge Parser*, to support resident efforts to contest over £127,000 of historic repairs on Cressingham. However, before I discuss the Parser, it is important to provide some context and introduce Lambeth's databases as more than a technological concern.

In 2012, officers cited widespread structural issues across Cressingham's 306 homes – which can be roughly divided into 210 council tenants, 90 homeowners, and 6 properties that have been left empty or in a state of disrepair since 1999. Officers, however, provided no evidence of major structural problems, so residents pushed for a survey of *all* buildings. However, an eventual 10% survey of buildings highlighted that poor maintenance was a primary cause of concern.<sup>3</sup> This led residents to mistrust statements from officers and ward councillors. Indeed, even a judge stated she 'felt uneasy' about financial information presented by Lambeth.<sup>4</sup>

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1 Lambeth Council, 'Homes For Lambeth Business Plan', 2019, [http://estateregeneration.lambeth.gov.uk/business\\_plan\\_2019\\_20](http://estateregeneration.lambeth.gov.uk/business_plan_2019_20), p. 15.

2 Tom Keene, *Database (e)State*, 2019, [www.db-estate.co.uk/about.html](http://www.db-estate.co.uk/about.html).

3 Tall Consulting Structural Engineers, *Cressingham Gardens Estate Structural Report*, 2013, [www.whatdotheyknow.com/request/219718/response/686941/attach/3/Cressingham%20Gardens.pdf](http://www.whatdotheyknow.com/request/219718/response/686941/attach/3/Cressingham%20Gardens.pdf), p. 7.

4 *Bokrosova v. London Borough of Lambeth*, Royal Courts of Justice, 3-4 November 2015, via British and Irish Legal Information Institute (BAILII), 24 November 2015, [www.bailii.org/ew/cases/EWHC/Admin/2015/3386.html](http://www.bailii.org/ew/cases/EWHC/Admin/2015/3386.html), para 86.



Fig. 1. Caryl Mann, *View of Cressingham from my back garden gate*, 2014.<sup>5</sup>

In 2014, a *Lambeth Labour Party*<sup>6</sup> manifesto pledge to build 1,000 council homes in the borough prompted plans to build 464 homes in place of Cressingham's 306. However, of these additional 158 homes, the majority are for high-value private sale or rent, with only 27 targeted for council rents.<sup>7</sup> In other words, Lambeth's proposals primarily feed a private housing market – a germane point considering officers have kept around 30 council homes on Cressingham empty since 2018 while they progress their plans.

Lambeth's consultation excludes those without time or expertise to participate. Contributors to the *Save Cressingham* campaign (henceforth @SaveCressingham), for instance, have attended consultation workshops, given speeches at cabinet meetings, held marches, submitted over 300 Freedom of Information Act requests, assessed complex financial documents, and instigated two judicial reviews (won one, lost one), and developed alternatives to demolition.<sup>8</sup> The effort to understand and influence a multitude of technical, legislative, democratic, and party political processes is immense, yet Lambeth's decision to demolish Cressingham stills stands.

In the UK, affordability and access to housing is a pressing social issue, though government proposals to address these problems through urban regeneration led by private investors or local authorities have proved highly controversial. The 2017 Grenfell Tower fire tragedy brought the democratic and deliberative practices of central and local government into sharp focus, as did long-running housing campaign groups such

<sup>5</sup> Reprinted with permission from the photographer.

<sup>6</sup> Lambeth Labour Party, *Lambeth Labour Manifesto*, 2014, <http://d3n8a8pro7vhmx.cloudfront.net/labourclp132/pages/59/attachments/original/1397750146/LambethLabourManifesto.pdf>, p. 15.

<sup>7</sup> Lambeth Council, *Investing in Better Neighbourhoods and Building the Homes we Need to House the People of Lambeth - Cressingham Gardens Estate*, 2016, <https://modern.gov.lambeth.gov.uk/documents/s80093/Cabinet%20Report%20-%20March%202016%20v8.pdf>, p. 1.

<sup>8</sup> Cressingham Gardens Residents, *The People's Plan*, 2016, [www.cressinghampeoplesplan.org.uk/docs/TPP.pdf](http://www.cressinghampeoplesplan.org.uk/docs/TPP.pdf).

as @SaveCressingham, *Focus E15 mums*, and the *Southwark Notes*. Central to these practices are database technologies used in the management of council housing stock. Such databases, however, are unacknowledged, poorly understood, and mostly invisible and inaccessible to residents.

## Artist and Activist Research

I devised strategies of *artist and activist led research* (henceforth research) to engage with the democratic, ethical, material, and intrapersonal implications of Lambeth's database technologies. My approach finds its root within a Critical Technical Practice proposed by the computer scientist turned theorist Phil Agre<sup>9</sup> and further developed within Goldsmiths University of London Cultural Studies department between 2007–2017.

My research draws from all aspects of my life: artist, activist, programmer, academic, husband, father, and resident facing the demolition of my home. As such, I identify each site as a valid location of research to provide different registers, or modes of reasoning, to consider how a world underwritten by data management technologies changes how I think and act. Importantly, I hold acts of theoretical research, making, programming, and activism in equal measure.

The technical register elucidates what the *relational database* does, which is a particular type of database used in Lambeth. In his landmark 1970s paper, E.F Codd is considered to have produced the first formal definition of the relational database, known as the *relational model*. The relational model introduced an abstract three-layer database architecture that separates how data is stored (internal), a database is structured (conceptual), and data is viewed (external). Codd's aspiration that '[f]uture users of large data banks must be protected from having to know how the data is organized in the machine' now means that non-technical users can work with databases.<sup>10</sup>

These abstract technical descriptions seem far removed from the management of a social housing estate such as Cressingham. However, these details produce particular arrangements of humans, computational machinery, and work environments. The relational model allows a Graphical User Interface (GUI) to access remote data-storage via database queries (a programming language called SQL) that can retrieve, sort, update, or delete data. A *database schema* describes a predictable structure for SQL to operate on in the form of tables, columns, data-types, and primary keys. These components mean that humans in Lambeth can simultaneously access the same data-set from any location with a network connection. Put another way, Lambeth's housing and other services are organized around an abstract relational model.

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9 Philip Agre, 'Toward a Critical Technical Practice: Lessons Learned in Trying to Reform AI', in Geoffrey Bowker, Les Gasser, William Turner, Susan Leigh Star (eds) *Social Science, Technical Systems and Cooperative Work: The Great Divide*, Mahwah, NJ: Erlbaum, 1997.

10 Codd, Edgar, 'A Relational Model of Data for Large Shared Data Banks', *Communications of the ACM* 13.2 (June 1970): p. 377.

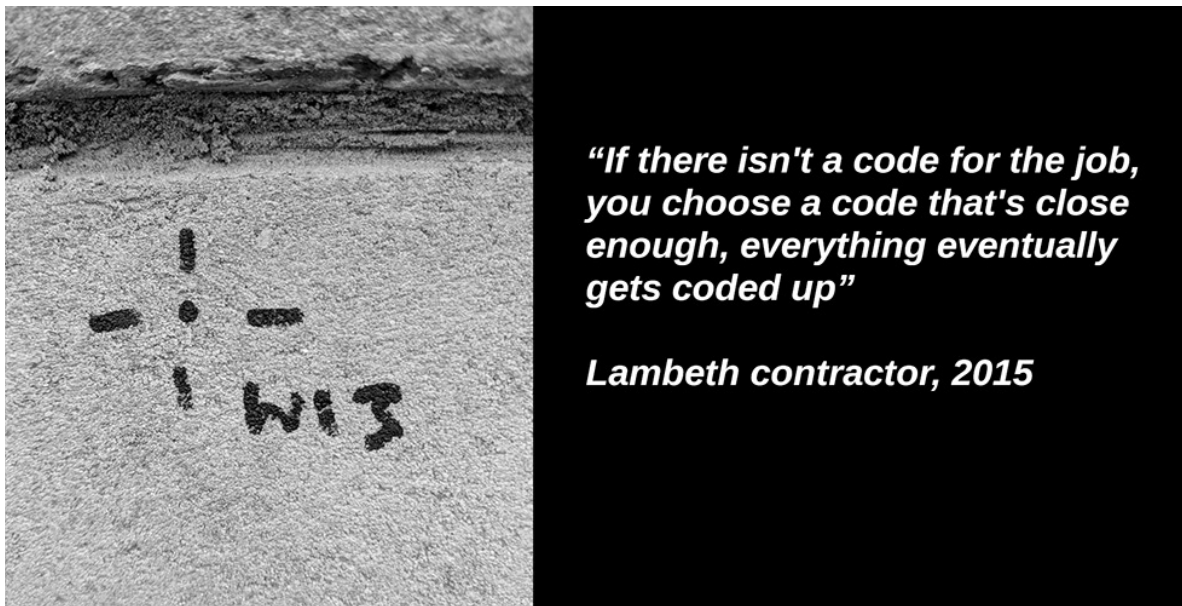


Fig. 2. Tom Keene, montage of a quote and surveyors mark on Cressingham, 2018.

The edges of Lambeth's databases are not clear because they are abstract, spatially distributed, operate through network infrastructure, and have changing sets of associations. Lambeth's primary housing database *Northgate*, for instance, manages the work of surveyors, contractors, officers, and call-centre staff in multiple locations across London and the UK. As such, Northgate is distributed across multiple hand-held devices, laptops, desktop computers, and servers. Furthermore, Northgate connects with stock condition and document databases in Lambeth, while also referencing the Land Registry and Ordnance Survey databases of central government. These associations make Northgate and other databases a difficult beast to figure.

Arts techniques, such as the montage in fig. 2, introduce an important register to address the ambiguous layers and associations of database systems. I coined the fictional title and acronym Housing Asset Repairs Management Systems (HARMS), to account for anything that *felt* (an intrapersonal observation) part of a database. HARMS was inspired by my art project *Aristotle's Office*<sup>11</sup> that employed the acronym OAP to describe a hidden communication protocol between technical objects of a certain age. HARMS resonates with the call of software studies scholars Matthew Fuller and Andrew Goffey to consider the evil in administrative technologies<sup>12</sup> and also with Adrian Mackenzie's observation that technologies are difficult to codify, symbolize, or quantify.<sup>13</sup> In essence, HARMS acts as a reminder, with intentional black humor, that databases can cause misery, distress, and have ambiguous associations.

11 Tom Keene and Kypros Kyprianou, 'Aristotle's Office', in Allan Seal, Susan Keene and Jonathan Bowen (eds) *EVA London 2009: Electronic Visualisation & the Arts*, Proceedings of a conference held in London 6-8 July 2009, BCS, 2009, pp. 285-7.

12 Matthew Fuller and Andrew Goffey, *Evil Media*, Cambridge, MA: MIT Press, 2012.

13 Adrian Mackenzie, *Wirelessness: Radical Empiricism in Network Cultures*, Cambridge, MA: MIT Press, 2010, p. 5.



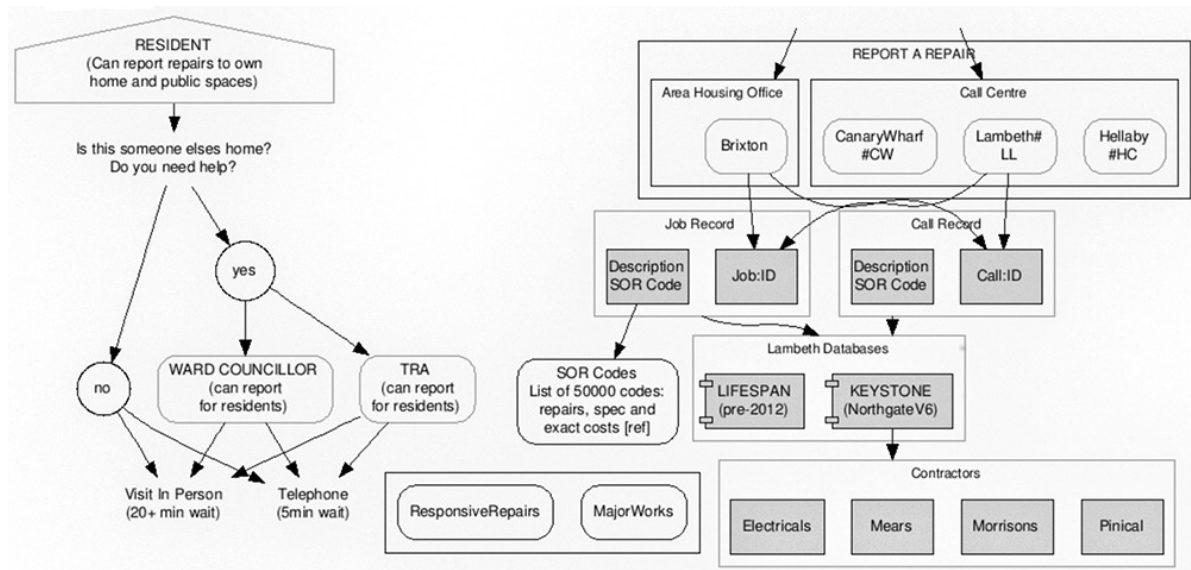


Fig. 3. Tom Keene, *My failed attempt to diagram Lambeth's databases*, 2016.

Philosophical theories of technology provide another register. The French philosopher Gilbert Simondon's 1958 concept of a *technical object* articulates Lambeth's databases as evolving process with many components, rather than a static entity.<sup>14</sup> Simondon's reformulation of what a technical object is better articulates HARMS than any technical diagram I have attempted to make (fig. 3). Furthermore, Simondon's concept of *technicity* helps articulate how components of Lambeth's databases have technical characteristics (their *technicity*) that governs what they and other components can do.<sup>15</sup> The artist and theorist Graham Harwood draws from Simondon in his concept of a *relational machine* to describe the collective endeavor of humans and machines to systematically gather information.<sup>16</sup> Here, Harwood recognizes humans as integral components of a database, and in doing so, introduces a radically expanded understanding of what a database is comprised of.

While it might seem strange to consider humans as components of machines, it is typical to describe ourselves as cogs within corporate or political machines. It is this sensibility that I apply to officers, contractors, and councillors, that all mediate how HARMS operates. Put another way, human-technical components of HARMS combine into a juggernaut of urban regeneration that appears hell-bent on the destruction of homes and community – a demolition machine that rides roughshod over the lives of Cressingham residents.

The components of HARMS collectively produce knowledge of Cressingham while acting on buildings and residents. Here, the French philosopher Michel Foucault's concept of power/knowledge helps articulates this as a process of displacement and transposition<sup>17</sup> or, drawing from

14 Gilbert Simondon, *On the Mode of Existence of Technical Objects*, trans. Cecile. Malaspina and John Rogove, Minneapolis: Univocal Publishing, 2016.

15 Gilbert Simondon, *On the Mode of Existence of Technical Objects*, trans. Cecile. Malaspina and John Rogove, Minneapolis: Univocal Publishing, 2016, p. 72.

16 Graham Harwood, *Database Machinery as Cultural Object: Art as Enquiry*, Sunderland: University of Sunderland, 2015, p. 18.

17 Michel Foucault, *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977*, trans. Colin Gordon, New York: Pantheon Books, 1980, p. 69.

## The Service Charge Parser

My bill is a material manifestation of one or more databases within Lambeth (see fig. 4). As such, working with this bill provides insight into an otherwise hidden database schema and the technicality of the relational database. The bill lists repairs to my block, displaying terms such as *Block Def*, *Job Number*, *Work Order Type*, *Job Details*, *Issue Date*, and *Completed*. These terms reference the structure of an inaccessible database with primary-keys that define a unique reference for specific rows of data. This reference system provides the basis of the many-to-many relationships (any row can refer to any other) that are the defining characteristic of the relational model.

[illegible]

Fig. 4. Tom Keene, *Extract from my service charge bill*, 2016.

18 Harwood, Graham, *Database Machinery as Cultural Object: Art as Enquiry*, Sunderland: University of Sunderland. 2015. p. 25.

Resp			<b>2.3 Drainage</b>			
Resp	GRD041	PR4	GULLY:RENEW GRATING	IT	15.27	£10.79
Resp	GRD043	PR3	MANHOLE:RENEW MANHOLE COVER/FRAME	IT	80.26	£56.70
Resp	GRD045	PR3	MANHOLE:REPAIR MANHOLE COVER/FRAME	IT	21.79	£15.39
Resp	GRD047	PR1	DRAIN:CLEAR BLOCKAGE TO GULLY/DRAIN	IT	13.13	£9.28
Resp	GRD049	PR3	DRAIN:CARRY OUT CCTV SURVEY	IT	157.50	£111.27
Resp			<b>3.0 Bricklayer</b>			
Resp	BWK001	PR4	WALL:REBOND FRACTURED BRICKWORK / BLOCKWORK	IT	96.54	£68.21
Resp	BWK002	PR4	WALL:REBOND FRACTURED BRICKWORK / BLOCKWORK HELIE	IT	134.80	£95.24
Resp	BWK003	PR4	WALL:REPOINT BRICKWORK / BLOCKWORK	IT	42.57	£30.08
Resp	BWK005	PR4	WALL:RENEW DAMAGED OR PERISHED BRICKS / BLOCKS	IT	52.60	£37.16

Fig. 5. Tom Keene, list of SOR codes obtained via a Freedom of Information Act request, 2018.

As a primary-key, Job Numbers wield a surprising amount of power/knowledge. Each Job Number identifies a row of data with references to other tables or databases. These references include *Schedule of Rates* (SOR) codes, which, as I discovered through a conversation with a contractor, define agreed costs between contractors and Lambeth (see fig. 5). When staff create a new job on Northgate, they select a *Job Type* (e.g. drain, brickwork) from a list that defines a relationship between Job Numbers and SOR codes. These many-to-many relations connect officers, contracts, contractors, residents, and their homes. That is to say, primary-keys establish relationships both inside and outside the technological confines of the database.

Many-to-many relations within Lambeth's databases are connected to ethical decisions to demolish peoples homes. For example, a count of Job Numbers associated with Cressingham (*Estate ID* EA037) and drainage repairs (SOR's GRD041, GRD043, GRD045, GRD047, GRD049) can indicate a high number of drainage issues. However, it is easy to forget that such representations can be misleading. During a repairs tribunal, for example, a housing officer confirmed that a majority of drainage issues on Cressingham should have been the responsibility of Thames Water, which inflated Lambeth's repairs costs. Notably, it took years of resident effort and then legal proceedings to contest this data, which questions the validity of a democratic process that is shaped by such metrics.

The successful challenge of a bill requires the situated and expert knowledge of residents and others. To this end, leaseholders on Cressingham hold annual meetings to jointly read our repair bills. At one meeting, a quantity surveyor taught us to recognize common mistakes in data and tactics by contractors to inflate repair costs. With these new skills, we identified around 200 repairs that lacked sufficient detail to warrant payment, had been charged for twice, had not been claimed on insurance, or were not completed. These issues prompted the group to inspect every suspect repair job, which is no small task.

A computational process optimizes the ways that I and others can work with data. It can take days of effort to copy data from multiple bills into a spreadsheet. As such, my background as a programmer prompted me to automate and optimize this process. I used the Python programming language to scan paper documents or convert each page of a PDF (Portable Document Format) bill into a series of JPG (Joint Photographic Experts Group) images. The code employs *Computer Vision* techniques to identify separate fields of data based on their location. Then *Optical Character Recognition* machine-encodes these image-locations into strings of text. Finally, the code combines these text strings into singles lines appended to a CSV (Comma Separated Value) file.



The relational model shifts the labour of inspecting repairs from housing officers to residents. It also shifts associated power/knowledge dynamics. The *completed* field of my bill, for instance, triggered my investigation into Lambeth's quality assurance methods, revealing officers only inspect 1% of repairs. Here, the completed field works as a binary marker to monitor repairs and indicates a *permissions* structure where contractors can mark their own work as satisfactory and complete. Residents, however, have no such permissions except through a long-winded call-centre and complaints process that, in my experience, effects little change.

The Service Charge Parser is a human-technical process that creates new possibilities of association and action. The code, for example, generates a CSV file that can be read by spreadsheet software, where previously PDF or paper documents could not. The new format means that residents can add items to an ever-expanding list and perform calculations on costs. These additional affordances alter how and where people can work with data. While these observations might seem banal and everyday, they highlight how components of HARMS like PDFs slow down and exhaust residents into inaction, while reformatting data into CSV files, for instance, equips and energizes them.

Banal acts of categorization produce an asymmetry of power/knowledge that privileges one group over another. Creating the Service Charge Parser, for example, produced a startling realization. While I visually inspected repairs on Cressingham, tenants informed me that they did not receive service charge statements because repair costs are included in their rental payments. Furthermore, because this data identifies individuals and their homes, Lambeth refuses to provide this information via FOI requests. This means that tenants are at a disadvantage because, unlike leaseholders, they cannot effectively audit repair data.

## Accelerations

The relational model is an essential component of local authority housing that optimizes and distributes the ways that humans think and act. It is difficult to imagine, for example, how Lambeth could manage their 140,000+ annual maintenance jobs without a relational database of some kind. However, while the relational model clearly helps Lambeth to cope with huge volumes of data, it also configures layers of government, contractors, and sub-contractors that produce that data in the first place. The 31 million documents and 336 companies of interest identified by police in their investigation of Grenfell provide a clear illustration of this.

I argue that this relational model configures and accelerates the marketization of housing services. The urban geographer Stuart Hodkinson describes this local authority world of repair, maintenance, and urban regeneration as an environment of private profit-seeking cartels that have cut quality and casualized workforces.<sup>19</sup> This environment is optimized and accelerated by confluences of database technologies, network infrastructure, and metrics that residents have little recourse to alter or contest. Crucially, these metrics and data-structures exclude a lived experience that questions the validity of both data and a participatory democratic process.

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<sup>19</sup> Stuart Hodkinson, *Safe as Houses: Private Greed, Political Negligence and Housing Policy after Grenfell*, Manchester: Manchester University Press, 2019, p. 29.

Acts of programming, activism, and theoretical research reveal a myriad of processes that occur between a resident reporting a repair, a bill arriving in the post, and decisions to demolish peoples homes that break-up communities. These strategies reveal how the sheer volume of information that databases produce makes it difficult for residents to hold anybody to account. As such, it is not enough to change individuals, legislation, or party politics to produce a more safe and egalitarian version of urban regeneration. Rather, we must also change the technical systems and our symbiotic relationship to them to produce different outcomes.

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