

Mtg notes (16th Oct 2022) – Graham, Rob, Dave

- Suggestion to include more references in Section 2.1.1 of 10-month review draft – this would include references to several high level SO approaches. Agreed.
- In Section 4, question of whether the novelty was in the use of shape constraints and whether more could be done there. Yes, this one novel aspect and more work could be done using shape constraints effectively, possibly incorporating shape to a goal programming formulation. Maybe best in short term to use current formulation to setup a SO problem.
- Question of whether the housing waiting list problem is an established problem in literature. There are some papers tackling problems related to homelessness including modelling associated healthcare services and optimising location of new homeless shelters, but ultimately no, the specific problem is not well established. *I am unsure as to whether this is an issue of concern for my PhD.*
- There are dynamic elements to the problem and the question of input uncertainty. These are not addressed by the proposed next steps of the PhD. Suggestion to outline how they could be addressed in latter stages of the PhD. Agreed some further discussion of these points would add value to the 10-month review doc.
- Discussion of distinction between:
 1. Generic MFSO methods which assume nothing of the structure of the problem and
 2. A specific MFSO method to tackle the housing waiting list problem, where known structure of the problem can be exploited.

Suggestion to stick to 2nd type of method. *Having started looking at MFSO methods, it seems appropriate to design methods which allow problem structure to be exploited, but still keeping the method applicable to any problem, using the housing waiting list as an example problem, given the availability of multi-fidelity models in this problem.*