

Work Package D: Metrics for the assessment of the Sustainability of Brownfield Regeneration Projects.

Objectives

The aim of this project is to develop a Sustainability Indicator Framework (SIF) which will allow for the assessment of Brownfield Regeneration Projects (BRP) at each phase of a sites life-cycle (figure 1). This research focuses on the small, site specific scale and explores the creation of an implementable, practical framework, which will assist the assessment of BRP sustainability at site level. In order to achieve the above the following objectives have been devised.

- Conceptualise and operationalise the key parameters of a Sustainable Brownfield Regeneration Project (SBRP).
- Review the existing range of indicators and SIFs, identify overlaps, interlinkages and gaps, and create a companion of the relevant SIFs to SBRPs.
- Develop and apply a sustainability assessment process which, if feasible, makes use of existing SIF, that integrates the key parameters and which allows for the assessment of SBRP across their technical, environmental, social and economic dimensions.
- Establish the role of key stakeholders in SBRP and develop appropriate participation techniques which integrates the stakeholders in the development and application of the SIF.
- Disseminate widely the findings of this research to ensure that sustainability assessment of SBRP continues even after the completion of this project.

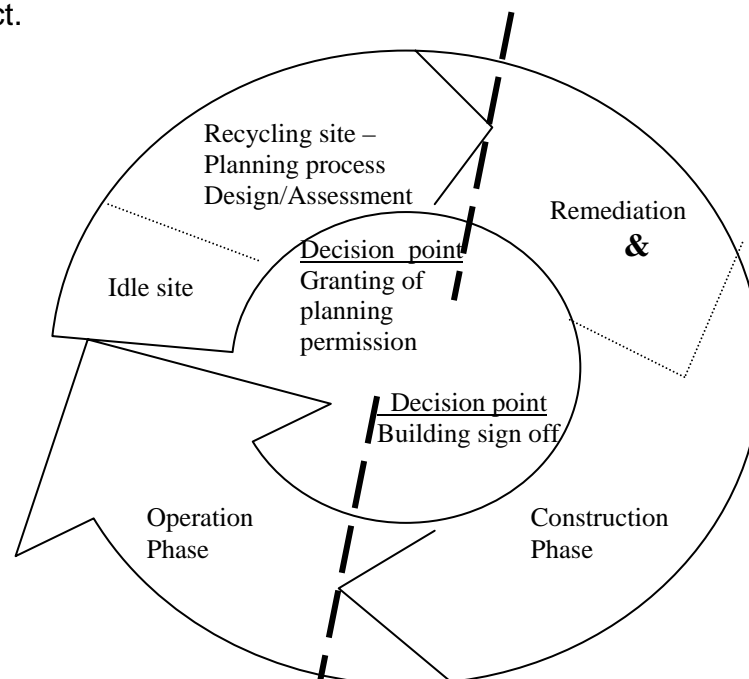


Figure 1 Brownfield Regeneration Project Life Cycle

Conceptual Model

Redevelopment of Brownfield land has been identified as an essential component to the achievement of the challenge of sustainable urban regeneration. However, the literature is filled with examples where redevelopment of brownfield sites has been unsustainable, as a result of failing to assess the environmental, social, economic and physical impact of the various projects holistically, as well as to consider the long term impacts of BRP in general (Symms, 2001).

Subsequently there has been the development of a whole array of Sustainability Indicators Frameworks (SIF) used to measure sustainability at different levels (Bell & Morse, 1999; Hardi & Zdan, 1997; Hartmut Bossel, 1999; Woodall & Crowhurst, 2003; Satterwaite, 1999). However, the use and nature of developed SIF and indicators has not been without criticism (Bell & Morse, 1999). Problems of oversimplification of complex issues through the use of indicators (Hemphill et al, 2002), issues of introducing bias through the selection of indicators used (Hartmut Bossel, 1999), as well as the actual capacity of indicators to measure long term sustainability (Bell & Morse, 1999) are only a few of these current criticisms.

Given the large number of existing SIF, there is scope for considerable overlap which exists between them. This identifies the need to review existing SIF and identify the existing overlaps, gaps and ways of interlinking the various frameworks with the aim of creating a holistic SIF targeted at BRP. Heinen, (1994) states that sustainability must be made operational in each specific context, at scales relevant for its achievement, and appropriate methods must be designed for its long term measurement. Therefore, in the urban regeneration context and at the BRP scale it is identified that there is a need to develop a SIF which will assess the long term sustainability of the projects as well as progress to sustainable urban regeneration.

With regard to the issue of indicator selection subjectivity Bell & Morse (1999) propose the acceptance of subjectivity and the adoption of an extensive participatory approach to the development of indicators to ensure the inclusion of key stakeholders views. McCarthy (2003), underlines the need for extensive participation not only in the development phase but also in the implementation phase of indicators.

Furthermore, many research projects have been criticised for being too academic and not representing the needs of the real world. Therefore, the approach to this project will be to develop a SIF which is easy to use, cost effective and not time consuming. This will require the input from existing SIF users as to the obstacles they have come across and the opportunities for improvement which they have identified.

Method

People, responsibilities, dates

- Project Management: Dr Walter Wehrmeyer
- Research Assistant: Kalliope Padiaditi

Project started November 2003 will last for minimum 30months

Data to be collected or generated

Much data, needs to be collected and analysed at various different phases within the project. These project phases and how they interlink as well as the method of data collection to be used are presented in Figure 2.

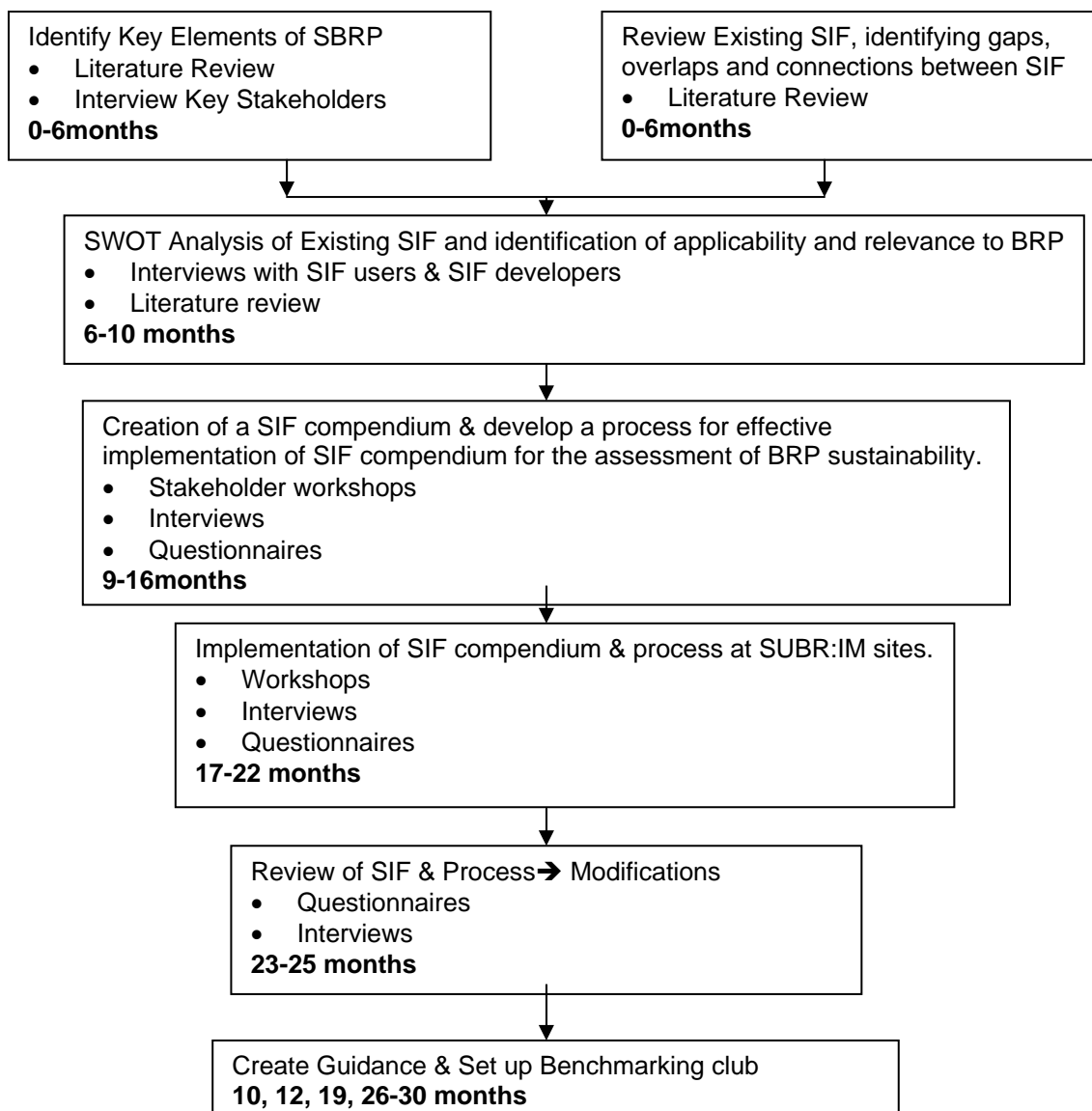


Figure 2: Methodology of WP D

As can be noted from figure 2 the research will use a variation of techniques such as survey, interview and case study techniques to develop and implement the SIF. Although the case study work will be focused on the selected portfolio sites, yet to be determined, it is envisaged that a general SIF and working process of implementing indicators will be extrapolated which will be widely applicable to all BRP at site level and at each site life-cycle phase (Figure 1).

The literature review consists a significant part of this research as existing SIF frameworks will be analysed to determine their applicability and suitability for the assessment of the sustainability of specifically BRP and at different life cycle phases (figure 1). The gaps, overlaps and potential interlinkages between the existing frameworks will be identified which in turn will dictate the actions which need to be taken to create a complete BRP SIF. Similarly the literature review will also focus on the key elements of SBRP and it is envisaged that co-operation between working groups will enhance the breadth of this review and minimise overlap.

However, this research aims to expand on the literature review early on in the investigation by conducting semi-structured interviews with a number of recognised SIF developers as well as SIF users to identify problems and areas for potential improvement. This feedback will be analysed in the form of a SWOT analysis and taken into consideration when developing the BRP specific SIF compendium.

This SIF compendium will be tested out on the various case studies by involving all stakeholders in the process through questionnaire surveys and focus group workshops. Feedback on the applicability and potential of the SIF compendium and the developed implementation process will be obtained again through questionnaire surveys and semi-structured interviews. Finally, changes will be made to the SIF compendium and process reflecting the feedback and a guidance document will be written up to disseminate the SIF compendium and process. It is envisaged that a benchmarking club will be set up which will allow participating case study projects to compare their performance and simultaneously encourage other projects to take up and use the SIF.

References

- Bell, S. & Morse, S., 1999, *Sustainability Indicators, Measuring the Immeasurable*, Earthscan, London
- Hardi, P & Zdan T, 1997, *Assessing Sustainable Development: Principles in Practice*, IISD, Canada
- Hartmut Bossel, 1999, *Indicators for Sustainable development: Theory, Method, Applications, A report to the Balaton Group*, IISD, Canada
- Hemphill, L., McGreal, S., & Berry, J., 2002, An aggregated weighting system for evaluating sustainable urban regeneration, *Journal of Property Research*, 19(4) pp353-373
- Satterthwaite, D, (ed), 1999, *The earthscan reader in Sustainable Cities*, Earthscan, London
- Symms, P.,2001, *Releasing Brownfield's*, RICS Foundation, Centre for the Built Environment, Sheffield
- Woodall, R., Crowhurst, D., 2003, *Biodiversity indicators for construction projects*, CIRIA WOO5, DTI, London