

Keywords civil Engineering & Surveying

Keyword selection is perhaps the most vital part of your search techniques. You can type an assignment or dissertation title into Google, [Google Scholar](#) or [Discovery](#) and you will get results. You can just type in words that occur to you, and you will find material. However, you can dramatically improve what you are retrieving with a little thought.

Let's take an example where your assignment or project title is concerned with 'structural performance of fibre reinforced concrete in UK housing'. Typing that phrase into Discovery, for example, will find over 8000 items. You might think that's enough to be going on with but by the time you've refined your results – perhaps by date or by source type – there may be very little material of any use.

If we start to think about alternative terms, we can widen the pool of our original search and include more relevant articles.

For 'performance' we might also think of 'tests' or 'standards'. Note that these are not all synonymous but may be the preferred term for a subject area, or a term used by some authors, or close enough to give relevant results.

For 'fibre reinforced' we might think about 'reinforced concrete' and that might in turn lead to thinking about 'concrete cracking' or 'concrete beams'; this might lead us on to ideas such as 'fibre reinforced composites' or 'frp' (or even 'f.r.p.' which most databases will treat as a different search). 'UK', 'U.K.' or 'United Kingdom' would also find different results.

We can consider using phrase searches to increase relevance. The phrases given above could be used as two or three word searches but "fibre reinforced" as a phrase would narrow your search considerably (using the double quotes will find fewer items than simply typing renewable energy, but the fewer results will almost certainly be more relevant).

We might try different spellings such as "fibre reinforced" or "fibre-reinforced"; or be aware of American spellings such as "fiber reinforced" (or "fiber-reinforced"). We can consider using the truncation feature of most databases to search for several words at once, e.g. building* would find 'building' but also 'buildings' etc. Note that you can't use truncation within a phrase search – although Discovery now allows this. Note also that Google will ignore punctuation, such as truncation or full stops in abbreviations, except for double quotes " " which it treats as a phrase search.

If you're finding too much material, you might choose to use narrower keywords, for example instead of 'concrete' try 'concrete beams'. If you're finding too little, you might need to broaden your search. For example instead of just 'UK', try 'Europe' or some other region of interest; instead of 'structural performance' try 'strength of materials' or 'materials property OR materials properties'.

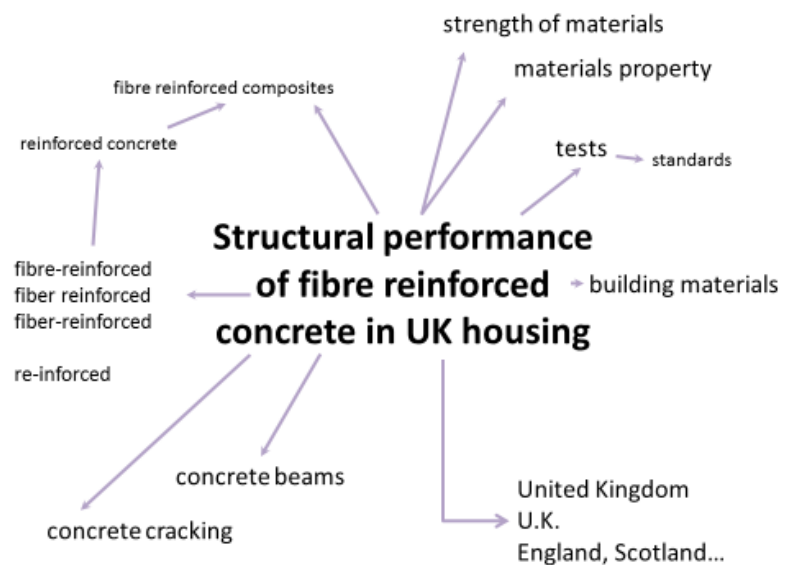
The mindmap on the following page shows an example of how you might develop your thinking, but this will be an ongoing process and this map, or lists of words if you prefer, will be an ongoing,

organic process that will develop as your knowledge of a topic grows. Our Library Guide [Applying a Search Strategy](#) gives you a form that can help with thinking through this process.

When you find an article, look out for keywords that a database or author or publisher has assigned. Even if the actual paper is not relevant, you might get good ideas for your keywords from these to reutilize in your subsequent searches.

Some databases offer a thesaurus which can help with keyword selection. [Engineering Village](#) – is a good example.

Note that you may find terms referred to as 'keywords', 'subject headings' or perhaps 'descriptors'.



Now take a look at how thinking about our search terms can affect an **advanced** search on Discovery. Instead of:

"fibre reinforced"
AND
concrete
AND
"structural performance"

which at time of writing produces some 7000 results (less than typing the topic as a phrase into the simple search box as we started with), we might try:

"fibre reinforced" OR "fibre-reinforced*" OR "fiber reinforced" OR "fiber-reinforced"
AND
concrete
AND
"structural performance" OR "structural propert*"

which gives nearly 9000 results. A bigger pool of relevant results with which to refine our search by date or source type etc. Of course we haven't added the idea of housing in yet, but we can add further lines of keywords if desired (use the '+ Add row' option).

For more on using OR and AND (as well as NOT), see our Library Guide on [Boolean Logic](#).

In summary:

Think about the keywords you use in the Library Catalogue, in database searching, or in Google or Google Scholar. Consider:

- Alternative words – lift/elevator; colour/color
- Note tips such as truncation: survey* will search (in most databases but not Google) for survey, surveying, surveyor, surveyors etc.
- Watch out for punctuation such as hyphens which Google ignores but many databases treat as a separate search (e.g. ecommerce, e-commerce OR "electronic commerce")
- Use " " to search for phrases "construction industry" or "building industry"
- Try out related keywords: bridges, causeways, hydraulic structures, transportation
- If you're finding too much, narrow down your search

- If you're finding too little, broaden your search out