

# **Cultural heritage in project management: project appraisal and quality assurance in the early phase of major public investments**

This method paper is an analysis of how cultural heritage values are handled in documentation related to early phase evaluations of major public investment projects in Norway. This study was instigated by an apparent lack in the consideration of cultural heritage values in such documentation. The purpose is to study cultural heritage values from a project management perspective. We conducted a case study document analysis to see how cultural heritage issues are addressed in the early phases of projects. Methodologically, the paper analyses the use of vocabulary related to cultural heritage values in the documentation. We chose Norwegian large governmental investments as cases because there is uniform documentation available from these projects. The results suggest that cultural heritage values are mentioned but seldom substantially discussed in the studied documents. In addition, cultural heritage values tend to be discussed using non-specific language instead of technical terms rooted in legislation. When cultural heritage values are discussed, there is an emphasis on legislation regarding cultural heritage and how the legislation can be a problem in relation to the project planning, design and execution. Today's discussion of cultural heritage values appears to be lacking and in need of a strengthened framework. The methodology applied in this study aims to provide a structured search method for the unstructured discussion of cultural heritage issues in these extensive documents.

Keywords: project appraisal, cultural heritage, project evaluation, early phase, quality assurance

## **1. Introduction**

In 2013, a concept evaluation was conducted to identify suitable future development of the Norwegian government quarters following a bomb attack. The concept evaluation concluded that two profiled buildings should be demolished, including the prime minister's office. This was unfortunate from a cultural heritage perspective. The announcement caused an immense public debate, and the proposal was later partially

rejected. Many asked how it was possible that the architecture and art were not considered in the first place; this was the starting point of this study.

Partal and Dunphy (2016) claim that projects that ignore cultural aspects tend to fail. Person (2012, page 50) writes:

*Balanced choices and decisions that will be readily accepted can best be taken if every impact of an economic, ecological and social character is taken into account.*

A study by Bond et al. (2004) shows that cultural heritage tends to be included late in the environmental impact assessment (EIA) process, after the most important decisions have been made (Bond et al., 2004). There is a need to evaluate the early phases of quality assurance of major public investment projects and how they handle protected heritage values.

The empirical results in this paper come from the study of documentation from 12 public investment projects in Norway, which are all available projects that meet the study criteria. These documents were made accessible for this study by the Concept research program, which is dedicated to research on major public investment projects, and by the Trailbase database. We quantitatively and qualitatively analysed the early phase project documents to search for vocabulary related to cultural heritage values.

### ***1.1 Addressing cultural heritage in the early phases of projects***

For several of the projects studied, cultural heritage was a major issue in the public debate preceding the building projects. However, there has not been a strong tradition of including cultural heritage as an aspect of the formal front-end analyses of these types of projects.

Cultural heritage values can be key factors in finding a suitable overall solution for the site they are part of and in the future management of these values. Cultural heritage is protected by law to be preserved for future generations. Thus, cultural

heritage is an aspect that should be considered in the early phases of a project to avoid greater insecurity and risk in project implementation.

One case, the new government quarters, illustrates that cultural heritage issues receive significant attention from the population. The conceptual evaluation recommended the demolition of two protected buildings, including the prime minister's office. The buildings are decorated with Picasso murals, internally and externally. The reactions were extensive and interests were mobilised. An extensive public process followed, a demand from the Directorate for Cultural Heritage that the buildings be kept (Madsen 2013), courses in universities on alternative solutions (AHO 2014), exhibitions (Galleri 2014), architectural competitions (NRK 2015), and many newspaper articles. A search of the ATEKST database of Norwegian newspapers on "government quarter\* demolish\*" ("Regjeringskvartal\* riv\*" in Norwegian) gives 7122 hits. Open house events in the buildings received major attention, with the public waiting for hours in line to attend (Aftenposten 2013). It has been decided that one of the two buildings will be kept. The debate about the second building continues. This public debate has demanded considerable resources from those involved. This could have been avoided with better assessment of cultural heritage values in the initial documentation. In 2011, the Directorate for Cultural Heritage demanded that the main building be protected throughout the new government quarters project (Holme 2011, Mjaaland 2011).

Projects that do not have appropriate regard for cultural heritage values might face considerable resistance. In managing cultural heritage values, the qualities of cultural heritage values must be considered. For predictability, the cultural heritage challenges must be assessed so that technologically challenging and costly adjustments or repairs do not arise. Basic project management theory provides that flexibility is

generally at its greatest in the early phases of a project, so there is no need to postpone the assessment of cultural heritage in a project.

Criticism of assessment procedures as decision-making tools has arisen (Eales et al., 2005). The final decisions are made by elected politicians. Their decision-making can be assisted by an assessment but is not dictated by it. Anticipated public scrutiny should underscore the importance of a substantial assessment that has integrity.

Regarding project impact assessments, Ross et al. (2006, page 7) note:

*Rather than attempt to create a 'smokescreen' that there is no risk to the environment by including such a lame conclusion, surely it would give proponents more credibility to acknowledge openly the significant (adverse) effects of their proposals and at the same time build a credible assurance of their ability to manage the consequences satisfactorily.*

## **1.2 Aims of the study**

The cultural heritage and project management communities have generally regarded each other as more of a threat than an opportunity (Klem 2016). Written by one author with a cultural heritage background and one from the project management community, this study aspires to build a bridge between the two disciplines. Moreover, early and intrinsic inclusion of the cultural heritage aspect initiates an enlightened design phase because key information has been provided (Geneletti, 2014).

The purpose of this study is to analyse how cultural heritage values are considered in the early phases of major public investment projects. Thus, we seek to highlight if and how cultural heritage values are included in the front-end documentation of major public investment projects. Methodologically, this is a case study of document analysis as a tool to study cultural heritage issues.

This paper analyses early phase project reviews of large governmental buildings for how cultural heritage values are addressed in project documentation. We show

which values were emphasised and what language and terminology was used in the documents to illustrate how cultural heritage values are addressed.

This paper explores three research questions. First, to what degree do early phase project documents mention cultural heritage? Second, to what degree does the treatment of cultural heritage include a substantial discussion of the subject? This includes an evaluation of substantial discussions to discover if cultural heritage values are viewed as values to be preserved and possibilities for future use or viewed as obstacles. Third, what does this connote for the future quality assurance of early phase major public investment projects that involve significant cultural heritage values? One purpose is to highlight an important aspect to the project management community. The methodology is a case study of structured document analysis. The paper is structured as follows. First, we introduce the Norwegian quality assurance scheme that provide the empirical data for the research cultural heritage and socio-economic analysis. We then describe the method and results, with a concluding discussion of the method, the results and their implications.

### ***1.3. Norwegian public quality assurance and the planning process for large governmental investments***

The planning process for large governmental investments includes several planning procedures. Three important planning processes are:

- Strategic plans for different sectors (such as defence, transport and education)
- Project selection and funding (including the QA scheme)
- Zoning and regulation planning, including Environmental Impact Assessments (EIA)

The sectorial strategic plans are developed by the responsible ministry in co-operation

with the agencies involved. However, implementation of the strategic plan is typically dependent on funding decisions in the yearly national budgets. This paper is focused on the project selection and funding process, referred to as the Quality Assurance scheme, or QA.

Impact assessment in public decision-making occurs worldwide (Benson, 2003). In Norway, zoning includes a general municipality zoning plan and a detailed regulation plan for certain areas when needed (Olsson et al., 2015). The process is defined by the Planning and Building Act in the form of different steps to be implemented by local authorities (Plan- og bygningsloven, 2008). The EU EIA and SEA directives (EIA Directive, 2011; SEA Directive, 2002) are implemented in the Planning and Building Act (Royal Norwegian Ministry of the Environment, 2013). The guidelines for EIA as a part of the Planning and Building Act (FOR-2014-12-19-1726) demand that cultural heritage aspects be addressed. As observed in Figure 1, this is at a relatively late stage in the planning process, after selection of the concept. For building projects, this means that the decision of whether to build a new facility, renovate an old one, or a combination has been made at this point. This study analyses earlier phases of the projects, when this choice is still open.

The data used in this case study come from documentation from the QA scheme of large governmental investments. In 2000, the Ministry of Finance in Norway launched a scheme that regulated mandatory quality assurance and uncertainty analysis for all large public projects, the Quality Assurance (QA) scheme. The scheme was introduced in response to cost escalation and immense overrun situations (Berg et al 1999) in large public projects, including public buildings. It is a set of requirements that governmental projects must meet before their approval and appropriation of funds by Parliament. This requires the responsible ministries to undertake reviews during the

front-end stage of major projects, with an aim of reviewing cost estimates and major risks that might affect project implementation.

The review of large governmental investments in Norway includes two key decision points, of which we had access to documentation.

- Concept evaluation (KVU) and QA1 - choice of concept before the Cabinet decision to start a pre-project; and
- Final project definition and QA2 - definition of a project execution model and cost estimates before the submission of the project to Parliament for final approval and funding.

Ministries and agencies prepare decision documentation, and consultants are commissioned to conduct quality assurance of the documents. We used documentation from the first decision point, related to the choice of concept. Quality assurance of the choice of concept (KVU and QA1) is performed early in the project decision process to ensure that the decision to start a pre-project includes choices between alternative concepts and that the decision is based on high-quality documents.

As a basis for a QA1 review, the ministry or agency prepares a documentation package called a concept evaluation (KVU, Konseptvalgutredning, in Norwegian).

The concept evaluation includes (Concept 2016):

- • needs analysis
- • overall strategy
- • overall requirements
- • possibility study
- • alternative analysis
- • guidance for the pre-project phase

In the beginning of the QA scheme, it was mandatory for all large public projects exceeding NOK 500 million ( $\approx$ Euro 56 million). The threshold was later raised to projects exceeding NOK 750 million ( $\approx$ Euro 83 million). Projects above this amount are typically transport, military material and public buildings housing national institutions.

Figure 1 illustrates the project selection and planning process, including the EIA and regulation planning. Strategic plans for different sectors typically provide input to the idea phase. However, the project selection and funding process is ongoing, whereas the sectorial plans are updated less frequently.

*Preferred location of Figure 1.*

Pre-qualified external consultants perform QA1 for quality assurance in decisions in public investment projects (Samset and Volden, 2013, Cui and Olsson, 2009). The consultants assess the concept evaluation documentation (KVU), including compliance with overall needs and an evaluation of whether the concept evaluation captures relevant alternatives.

A KVU is similar to what Fischer (1999) termed mandatory policy-oriented or project-oriented programs with public participation and with the SEA (Fischer and Onyango, 2012). It is performed by the end of the idea phase shown in Figure 1, before a decision is made by the Cabinet to start a pre-project.

This study is based on analyses of these quality assurance reviews related to building projects. We chose to study KVU and QA1 reports because cultural heritage values can be key factors in finding the best solutions for building projects. High-profile public projects are important for future management of cultural heritage values. In Norway, these studies are made earlier than the EIA, before important decisions are



made. Bond et al. (2004) showed that cultural heritage issues were often addressed late in the EIA process, at a stage when important decisions have already been made. We studied how cultural heritage issues are addressed at an earlier stage in the process than conventional EIAs.

Samsø et al. (2016) compare the Norwegian scheme for quality assurance of major public projects to similar schemes in five other countries (Denmark, Sweden, the Netherlands, the UK and Canada/Quebec). The schemes have common features; they all place governance responsibility at a high level in the political system. There are also several differences such as those regarding who performs quality assurance, the relation between technical matters and politics, and the scope of such schemes. Norway and the Nordic countries have opted for scheme intervention points in the front-end phase and not during implementation, in contrast to the other countries.

#### ***1.4 Cultural heritage values in the QA scheme***

Cultural heritage sites are simultaneously cultural monuments and resources for use. According to Feilden (1982), historic buildings may have several types of value, including architectural, aesthetic, historic, documentary, archaeological, economic, social, political, spiritual and symbolic. Feilden (1982) lists values that are important in the conservation of historic buildings: emotional, cultural and user-related. Unnerback (2012) identifies different aspects to consider when studying historic buildings, including documentation value and experience value, as well as different enhancing aspects that include uniqueness, authenticity, representativeness and pedagogical values. (Author citation) propose nine primary aspects to assess cultural heritage sites: history, architecture, structure, environment, legislation, planning, time, use and economy. This model for holistic analysis of cultural heritage was the basis for our search query that aimed to grasp the relevant discussions in the documentation.

Cultural heritage carries values and restrictions to protect these values. Building projects that cost more than 750 million NOK typically involve buildings for national institutions that are widely recognized. These have a previous history and existing monumental buildings and involve cultural heritage values, spanning from our nation's most recognized buildings, to sites with less significant cultural heritage values, with no legal protection.

The project's front-end phase is when the project exists conceptually, before the final decision about financing the project is made. We studied projects in this phase because the most important decisions regarding cultural heritage management are made in this phase. At this stage, the possibility of influencing the final outcome is at its highest.

Three key stakeholders in public investment projects are as follows: (1) the responsible ministry, (2) the project organisation, and typically (3) the executing government agency between the ministry and the projects. Quality-at-entry analyses are conducted on behalf of the ministry. Pre-qualified consulting firms perform the quality assurance and uncertainty analyses. Other agencies such as cultural heritage authorities are included as stakeholders, but they have little direct impact on the final documents. Different stakeholders may have entirely different interests in a project and in different project concepts. This means that there might not be a uniform desire to obtain a neutral analysis of all available alternatives.

### ***1.5 Socio-economic analysis and cultural heritage values in the QA scheme***

The KVV and QA1 include an alternative analysis and a socio-economic analysis.

Socio-economic analysis is conducted to support assessment of investment potential.

Together with ethical and other political considerations, this type of analysis constitutes

the essential elements of the basis for decision-making in major public investment projects. Socio-economic analysis does not traditionally include cultural heritage values. Consequently, it is relevant to briefly discuss how cultural heritage values are handled in socio-economic analysis.

Socio-economic analysis is used to assess public investments in many countries (Odgaard, Kelly and Laird 2005). However, because the analyses are often regarded as a “black box” by those not directly involved in them, the results are questioned (Kaufman et al. 2008). The existence of non-valued costs and benefits also raises questions about the worth of socio-economic analysis (Tavasszy et al. 2005).

The most frequently used analysis for the projects studied here is cost-effectiveness analysis. Two projects also use cost-benefit analysis. The main difference is the emphasis on assigned monetary value in a final decision between alternatives. Cost-benefit analysis assigns monetary value to both costs and effects, whereas cost-effect analysis uses only the monetary value of certain aspects and is limited to describing the effects.

Criticism has been raised regarding the use of socio-economic analysis as a decision-making tool regarding cultural heritage values instead of long-term multigenerational analysis (Stoffle et al., 2008)

It is difficult to set a monetary value on cultural heritage. Therefore, these types of values are typically treated as non-quantifiable values in the socio-economic analysis.

Criticism has been aimed at socio-economic analysis because it is associated with a range of methodological problems. These include valuation of inconvertible effects (these can be remedied through willingness-to-pay surveys), discounting and the issue of distribution of costs and benefits between different sections of the population. The main problem with socio-economic analysis is specification, in numbers, of all the

benefits and costs, especially those that do not obtain valuations through trade. The method presupposes that all effects can be quantified, including those that affect only direct users in the project, and that the monetary values applied are socio-economically correct. Small (1999) states that the goal is not to replace subjective, personal or political judgement but to complement these with facts, quantifications and valuations of a set of alternative solutions. Kornai (1979) deems it “unnatural” to try to reduce all factors in complex problems to merely one dimension. He compares this to a doctor; the doctor would not dream of considering a patient’s health using a single indicator because good lungs cannot replace bad kidneys. Kornai, an economist, questions why economists continuously strive for a single common denominator.

Concept evaluation documentation (KVU) has been criticized in QA1s for monetizing or ignoring values that may have infinite value. Several of the QA1 documents studied note that a socio-economic analysis is unfit for making ethical decisions.

## **2. Method**

### ***2.1 Data collection***

The source of information in this study is documents from an overview of projects that have been through KVU and QA1 analysis as part of the QA policy. The purpose was to perform a case study of document analysis using word detection software. We chose documentation that is uniform across the studied projects and was subject to consistent requirements. Interestingly, the material consists of two documents for each project; one made by the agency proposing the investment (KVU) and one by consultants conducting the quality assurance for project proposals (QA1). These documents represent two perspectives on the same project. This study began by reviewing the

projects subject to KVU and QA1 in a database (Trailbase). The sample consists of all large public building projects to be carried out by the Statsbygg or Forsvarsbygg public bodies, the two largest real estate managers in Norway, responsible for 2.8 and 4.1 million square metres, respectively. Twelve projects were suitable for research due to the detailed project descriptions. We studied KVUs and QA1s. These documents might consist of several individual parts and may be excluded from public view during the decision-making process. Documentation that is accessible to the public might not be easily accessible or broadly communicated. The projects studied are briefly presented in Table 1. We included all of the projects in Norway that met the project-related and technical specifications.

The majority of the projects include cultural heritage values with legal protection. We did not limit the study to projects that include such values for two main reasons. First, it is interesting to see differences in how such values are treated in projects with and without cultural heritage with legal protection. Second, sites without such legal protection might still be in a position where the discussion of cultural heritage values is appropriate, such as the new life science campus (project nr. 173) that connects existing university hospitals and a university campus, including 39 buildings with national protection and 15 buildings with regional legal protection.

*Preferred location of Table 1.*

For transparency, we maintained the Trailbase project numbers. For budgets, we used the most recent data available. We have stated the year of each estimate. The sample includes building projects subject to the government's quality assessment policy at the time of the study. All of the facilities are special-purpose governmental building

projects. The majority of projects are built or will likely be built by Statsbygg, a public-sector administration agency responsible for governmental special purpose buildings.. Statsbygg provides special-purpose buildings to public sector enterprises. One facility is or will be built by the Norwegian Defence Estates Agency (“Forsvarsbygg”). Both agencies are responsible for construction and facility management. The projects are relatively large by Norwegian standards. Some of the projects are high profile, notably The National Museum with the Munch Hall, and the government quarters in Oslo.

Three projects are higher education facilities, two are museums, two are prisons, two are archives, one is a fighter plane air base, one is offices (new government quarters), and one is secret at the lowest level, “exempt from public disclosure”.

The list of selected cases contains projects for which it is relevant to consider cultural heritage values. This is shown in Table 1, with an overview of projects and on-site cultural heritage values with legal protection. This includes the monumental buildings in the centre of Oslo and newer projects such as the fighter plane air base (project nr. 168). The innate conditions are not altered as much throughout time as one might think, and the new fighter plane air base will be situated in an area that has been high-powered for centuries and is thus important in our national history, close to the castle of Austrått, mentioned in Snorres Saga (Snorre Sturlason, 1179-1241). The Museum of cultural history (project nr. 138), consists of two buildings: the most prominent Jugendstil building in Norway and an architectural masterpiece that houses the world’s best-preserved Viking ships, immovable due to their frailty (Forskrift 2017).

The projects studied ranged in budget from NOK 776 million to NOK 16 billion (86 million to 9.6 billion Euro). All of them are public building projects. Because several of the listed budgets are cost spans based on the alternative analysis or on

different criteria, an average budget would be rather inaccurate. Despite these limitations, the studied projects can be characterized as relatively large.

## ***2.2. Data analysis***

Two approaches were used. Because the QAs in this report include many pages, computer programs were used for the rough sorting.

We studied the reports to see how the cultural heritage values were included in the analyses. The word query aimed to include several aspects in relevant fields and register the number of times the related words appeared in the documents. In addition, we manually reviewed the reports to map the context in which cultural heritage management is discussed, if it is an actual hit, and if it is merely mentioned or involves substantial discussion. We considered discussion of cultural heritage values in which the topic was addressed using other terminology than that coded in the automatic analysis.

This study is based on an exploratory case study research approach. In the terminology of Yin, the analysis is a multi-case study.

We analysed the QA language/terminology of values based on a newly developed model for holistic assessment of cultural heritage sites (author citation).

We reviewed all projects subject to KVVU/QA1 and selected those regarding public building projects. Of these, one was exempt from public disclosure. Classified documents can be handled in several ways, so we chose to anonymise the project and avoid discussing it in detail. We excluded projects for which files were inaccessible for technical reasons. We analysed 12 cases in this study, all offering QA1 documentation. Nine had a preceding concept evaluation, KVVU. For the QA1 projects with no KVVU available, the QA1 was conducted based on confidential KVVUs or on other types of documentation.

Based on the authors' model for holistic analysis of cultural heritage sites, we created a set of keywords (author citation). The original model was tailored for evaluating cultural heritage concerning values that represent potential for use. In this work, the content of the model has been input to the set of words listed in Table 2, and considers architecture, construction, cultural heritage, art, and legislation, environment and planning. The specific words have been selected based on professional language, terms used in legislation, and themes the legislation and public management emphasise. In this work, the content of the model was the set of words listed in Table 2. All documents were analysed by a tailored software that maps defined words and phrases. The program, Wordcountcrawler (Author citation), is based on copyleft software for working through documents. The program will be accessible for future researchers, free of charge, according to copyleft policies. The program has been developed to work with all languages that use the Latin alphabet. As it is an open-source program, further development of the program is an intended possibility. The query also included hits for larger words that include a word from the query, thus not limiting it to a search for a word+spacing. However, it will only show hits with the same spelling of the given word (stem). The search query is listed in Table 2. The search was done in Norwegian, and the terms were translated to English for this paper.

*Preferred location of Table 2.*

There are limitations and possible sources of error in this research. Computer programs were used for the word analysis. A search query was performed using words considered precise enough to include relevant information without too many irrelevant hits. Relevant text in which different language is used might not be identified in this



study. Two different file formats, Word files and PDF files, were used for the sorting based on the format and flexibility of the KVVU and QA1 files we had access to. There are differences in the complexity of information in the two file formats, including whether the text is stored as simple text or is given additional characteristics such as registration as a header or footer. A header or footer will be counted only once in a Word file and once for every page in a PDF file. Two different approaches are used by Wordcountcrawler to work through the documents, which could lead to foreseen and unforeseen differences in the results. We have chosen to work with the accessible file format because it is the one presented to the public, for example, for word cloud analysis by journalists.

The written information in the documentation needs to be stored as text in the document. Data that are only registered as picture files (pixel data) are inaccessible in this research method. Therefore, we had to cut projects from the case study: one project because the documents had been printed and then scanned to re-create it as a digital file and another project because text-recognizing software was applied to a scan of a printed file. Although the file was reconstructed, it had many typos, making it unfit for this study. This has not been a noticeable issue with the case documents studied, but we cannot rule out the possibility that text connected with an illustration might be lost, or that there may be misspellings. All detections of words identified in the search were read in person to sort into five groups based on meaning.

### **3. Results**

The following results are divided into two sections. First, we present the results of the generic searches. Second, we show how these hits are divided between the five groups, from substantial discussion of cultural heritage to incorrect hits. The five groups are mistaken hits, non-substantial discussion, substantial discussion of cultural heritage in a

negative connotation, substantial discussion of cultural heritage in a positive connotation, and discussion of architecture.

### **3.1 Word counts**

For the search query, we aimed to use words that are precise enough to limit false hits. The list was translated from Norwegian and is shown in Table 2. We used specific and generic words because the QA documents have relatively generic language. The searches were made fuzzy to a degree; longer words containing the search query were included to collect variations of a given word and to capture different variants of the Norwegian language.

*Preferred location of Table 3.*

*Preferred location of Table 4.*

Two tendencies are apparent from the search query ranking. There are more hits for established technical/professional terms such as “Architect\*”. There are fewer hits for words that describe building details, construction, components, architectural quality and urbanism. Generally, the documents do not use what are considered well-established technical terms in the cultural heritage community.

The different building components are represented by few hits. For example, all comments on facades concern the costs related to repairs and maintenance. More detail-oriented opportunities that seek to utilise and enhance the cultural heritage values are lacking.

There are variations in the use of words between different projects. In Tables 3 and 4, these three projects appear to have greater emphasis on professional terms: New National Museum (78), Cultural Historic Museum (138), and New Government Quarter

(220). For example, the Museum of cultural history (no. 138) and the National museum (78) both have a large number of hits for “culture” and “history”. From a cultural heritage perspective, we note that the KVVU for the new government quarters (no. 220) has high frequencies of the words “protect” and “preservation”. A closer reading shows that this emphasis is not due to the cultural heritage management expected in these projects but is due to the names of the institutions, their purposes, and authorship by architects. These lead to hits in the search query. Because sorting would require application of human judgement, we chose to include these accidental hits in the primary numbers.

### ***3.2. Comparisons between concept evaluation (KVVU) and QA1***

We looked at the correlation between the numbers of the same keyword in the concept evaluation (KVVU) and QA1 for the same project. Based on Tables 3 and 4, the correlation coefficient is 0.89. A scatterplot is shown in Figure 2; it indicates that there are similar focuses in the concept evaluation and QA1 text.

*Preferred location of Figure 2.*

Generally, the QA1 documents are relevant and precise in evaluation of the KVVUs and discussion of the premises for a decision. They are especially important when analysing complex, unavailable or classified documents.

### ***3.3 Case: The New national museum. How are the words used?***

A summation of benefits or costs and degrees of uncertainty may obscure the chain of reasoning, while the documents are systematic and comprehensive and appear correct

and trustworthy. To explore the actual meaning of the words used, we selected a case project for further study.

We studied documentation related to the new national museum project in detail because it stands out due to the number of hits for technical terms.

We sorted these hits into five different groups based on meaning:

- false hits: another word/meaning/part of a name/header/footer or equivalent;
- text without substance: mentions of heritage without discussion, conclusion or message;
- cultural heritage is mentioned with a negative message such as restrictions that apply;
- cultural heritage is mentioned with a positive message such as values that should be preserved, experienced or developed; and
- architecture: this is relevant because we work with buildings that are protected as cultural heritage sites.

A cultural heritage site is not created by the resolution to protect it—the legal protection represents an acknowledgement of previously existing qualities in a building (Gadamer 2010). Architectural and historic qualities qualify for legal protection, on equal terms (Lov 2017). Therefore, it is relevant to include architecture. We included all hits on architecture, not just those that refer to architecture protected as cultural heritage.

This sorting required a considerable degree of judgement. The boundaries between the five categories can be debated, but in cases of doubt, we placed a hit in the category with the most positive connotations of the considered categories, cultural heritage mentioned with a positive message, then architecture, cultural heritage

mentioned with a negative message, mentions without substance, and false hits as the least attractive category.

The first three categories are defined as having substance, and the other two categories are considered as without substance. There are more hits for text without substance than for text with substance.

Tables 5 and 6 summarise how the different mentions of cultural heritage were classified.

*Preferred location of Table 5.*

Being an art museum, words related to art were the most frequent in this study. In the KVVU, terms related to art, history, and culture were frequently used in contexts that were judged to be superficial. Notably, legal protection was the most commonly used word related to cultural heritage as a problem in the KVVU. Words related to history were the most common expressions related to cultural heritage as an opportunity in the KVVU. Interestingly, legal protection was frequently treated as a positive value in the QA1 documents.

*Preferred location of Table 6.*

Another finding regarding language, shown in Tables 5 and 6, are these words: "signal building", standard, monument, and "build solution". These are words used in the analysed documents to describe architecture and cultural heritage's qualitative basis. The words were not among our initial primary word search. They surfaced through our work with these documents. These words are borrowed from other fields such as statistics (representativeness) and older expressions that do not comply with current

legal definitions of cultural heritage such as discussions of monuments or newer linguistic creations such as “signal buildings”. These words are imprecise, especially "standard", which is also a common word in regulations and standardisation.

#### **4. Concluding discussion**

We first discuss the results and their implications. Then, we discuss the method applied in this study. Cultural heritage values are a significant aspect in several of the projects, as shown in Table 1, and the documentation is referred to as quality assurance.

Therefore, it can mistakenly be assumed that they truly consider cultural heritage values but they do not. The fact is that a formal review provides a decision basis that is verifiable. This seemingly significant but shallow discussion of cultural heritage values is considered a weakness.

The purpose of this study was to understand the relationship between the KVVU and QA1 documents and cultural heritage values. Cultural heritage management was not a main issue and is typically included as a part of other framework conditions.

As background for the research, we provided a short introduction to the Norwegian quality assurance scheme for governmental investments. One premise is that the alternative analysis should be socio-economic. This is related to roots in the Norwegian quality assurance scheme that aim to avoid cost overruns.

The paper attempts to answer three questions. The first is related to whether KVVU and QA1 documents mention cultural heritage. KVVU and QA1 documentation was processed by software that registers the frequency of words. We used a search query related to cultural heritage. Hits were read manually. Working with a search query allowed for working with a large amount of text in a structured and efficient manner.

Our findings show that there is no structural emphasis on cultural heritage as an important aspect in its own right in these documents. The generic searches resulted in many hits for culture-related words used in various ways.

The documents did not employ professional terms used in the cultural heritage field in the discussion of such values. It is unsurprising that a document such as the concept evaluation that seeks to be unifying applies a neutral language. Many key stakeholders and interests are cooperating and have expectations that their own perspectives will be recognized in the documentation. A degree of linguistic precision may be lost in the quest to be diplomatic and constructive. The risk is that less precise language fails to communicate adequately and is open to interpretation, misunderstanding and missing points.

Second, we studied the degree to which the mention of cultural heritage includes a substantial discussion of the issue. The number of hits in the documents provided an initial impression of the discussion. However, a closer evaluation of these hits revealed little substance. This altered the initial impression that the documents showed concern with cultural heritage values. The method has been a valuable tool in structured handling of numerous documents and in exposing the documents' substantial treatment.

The findings from this analysis are surprisingly clear, showing that key values in given projects regarding cultural heritage have not been subject to a genuine, relevant analysis. The qualitative analysis shows that the KVU and QA1 documents do not emphasise cultural heritage. When cultural heritage is mentioned, it is mainly concerning costs and administrative procedures.

The documents answer to their mandate to analyse monetary costs with an aim of avoiding cost overruns and selecting investment projects that are socio-economically profitable. However, they do not answer to the complex reality by putting sufficient

emphasis on a genuine discussion of cultural heritage. Cultural heritage has key values that are not monetary, and this makes socio-economic analysis an insufficient tool for the management of such values.

We found that otherwise commonly used professional terms are obscured in these documents and replaced with a more informal linguistic approach. In using non-established terms, the advantage of precise tools is lost. The KVVU and QA1 documents would gain clarity and applicability with more conservative, professionally founded language regarding buildings of quality. More precise language carries a potential of increased consistency. This potential is also apparent from the large share of text related to cultural heritage qualities that lacked substance.

Third, we asked what this connotes for future quality assurance of early phase major public investment projects involving significant cultural heritage values. The results show differences between the considerable immaterial value of cultural heritage and the emphasis on it in quality assessment in the early phase of major public investments in Norway. The KVVU and QA1 documents cover a number of professions and are primarily required to cover a defined need in the future. It is surprising to see our national heritage slighted and the Directorate for Cultural Heritage reduced to barely mentioned stakeholders in important documents for the future management of cultural heritage, which stands out to us as central and important. The public debate related to these processes shows that unquantifiable values stand stronger in society than in these documents. It appears expedient to strengthen the competence and emphasis on cultural heritage values: building preservation, history and architecture in the external quality assurance of major public investment projects. The aim is a quality assessment that leads to truly suitable decisions. Our recommendation is that cultural heritage values should be deliberately included in such documentation. Currently, the



discussion of cultural heritage in these documents is not sufficiently professionally evaluated using professional language. It is our goal to contribute to future QAs having an increased consciousness of registration of cultural heritage values. It is important that stakeholders and decision-makers note that a socio-economic analysis cannot cover all key areas of the decision. Socio-economic analysis does not provide the solution to dilemmas regarding intangible, historic and architectural values. Improved recognition of cultural heritage values in QAs will facilitate suitable management and conservation of such values.

This implies that cultural heritage values should be more involved in future quality assurance of early phase major public investment projects or should be considered in the decision-making process. A stronger framework or demand for assessment of the cultural heritage aspect might function as a mere point to check off the list; the fear would be that hypocrisy is accommodated to cover up gaps in the treatment of heritage values. A genuine assessment should be the objective.

The findings should provide valuable insights for those who work with QAs and for those involved in cultural heritage management related to public buildings.

The aim was to analyse a large amount of text to study cultural heritage values from a project management perspective. This paper offered an overview of language related to cultural heritage in early phase quality assessments of major public investments in Norway. The results suggest that cultural heritage values are mentioned but seldom substantially discussed in KVVU and QA1 documents. In addition, cultural heritage values tend to be discussed using non-specific language instead of technical terminology. When cultural heritage values are discussed, there is an emphasis on legislation regarding cultural heritage and the problems that it can create in the building process. The methodological novelty of this paper is in its approach to larger amounts of

structured text in which the desired information is not considered in the existing structure. This method can be relevant for a wide range of text analysis situations. This method acquires suitable datasets and a tailored search query with an appropriate delimitation. Regarding the sorting, evaluation of substance was decisive. The automatic sorting was helpful. In contrast to a judgement of substance, it acted as an eye-opener but would not have worked as well alone and could have been misleading. The choice of search terms and groups for sorting were key elements in the research, and we would recommend future researchers to make this framework clear and well founded. Two main directions were identified for further research. One is further development of the search method. This includes development of the open-source software, specifications for the word query and the evaluation of its results. The other path of research is related to management of cultural heritage values. The study of existing QA documentation and key stakeholders can be extended or the mandate for quality assurance of major public investment projects and how it should be implemented in the future can be analysed to facilitate suitable decisions.

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### **Figure captions**

Figure 1. A simplified overview of the planning process for the studied projects.

Figure 2. Scatterplot of word frequency in concept evaluations (KVUs) and Quality Assurance 1 reports (QA1s).

### **Table captions**

Table 1. Overview of the studied projects.

Table 2. Overview of the search terms.

Table 3. Occurrences of cultural heritage-related terms in concept evaluations (KVU).

Table 4. Occurrences of cultural heritage-related terms in Quality Assurance 1 (QA1) reports.

Table 5. Use of cultural heritage-related terms in the concept evaluation report (KVU) for project 78, the National Museum.

Table 6. Use of cultural heritage-related terms in the Quality Assurance 1 (QA1) report for project 78, the National Museum.

Table 1

Project Nr.	Name	Type	Year QA1	Budget <sup>1</sup>	Buildings/areas protected by law	
					National	Regional
78	“Nasjonalmuseet”, The National Museum	Museum	2006-2009	4690 mill NOK (y2013)	5	4
86	“Nybygg NVH (Campus Ås)”, campus	University college	2006	5180 mill NOK (y2013)	19	-
115	“Ullersmo” prison	Prison	2009	1305 mill NOK (y2007)	-	-
138	“Kulturhistorisk museum”, Museum of cultural history	Museum	2009	2622-3119 <sup>2</sup> mill NOK (y2009)	2	-
168	Expanded air base for new F35 fighter plane	air base	2012	4,2-6,6 <sup>3</sup> bill NOK (y2011)	9	3

<sup>1</sup> 1 €≈9 NOK

<sup>2</sup> Net present value of the valuable effects, QA1 2009.

<sup>3</sup> Expected, discounted life cycle cost, QA1 2012

173	Life science campus at UiO	University college	201 2	3973 <sup>4</sup> mill NOK (y2012)	-	-
192	Management of public storage of publications and information	Office and information storage	201 1	776 mill NOK (y2014)	-	-
201	New facilities for public agency (“Brønnøysund-registrene”)	Office and information storage	201 0	880-900 <sup>5</sup> mill NOK (y2010)	-	-
217	Prison capacity in southwest Norway	Prison	201 3	10-16 <sup>6</sup> bill. NOK (y2013)	28	0
220	The Government quarter	Offices	201 4	800/12100-15700 <sup>7</sup> mill NOK (y2014)	7	2
237	Exempt from public disclosure	-	-	-	-	3
248	Campus NTNU	University college	201 5	1,2-2,2 <sup>8</sup> bill NOK (y2015)	15	6

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<sup>4</sup> P50, most likely cost.

<sup>5</sup> Cost data from the alternatives analysis, QA 1.

<sup>6</sup> Expected, discounted life cycle cost, data from the alternatives analysis, QA 1.

<sup>7</sup> Investment costs data from the alternatives analysis. QA 1. 800 mill is for the as-is alternative, which is unrealistic due to damaged buildings.

<sup>8</sup> Investment costs data from the alternatives analysis, QA 1.



Table 2

Word Query	Theme	Aiming to find
Architect	Architecture	Discussion of cultural heritage buildings
Structural	Construction	
Construct*		
Material		
Cultur*	Cultural Heritage	
Protect*		
Legal*protect*		
Preservation		
Histor*		
Art	Art	
Interior	Building components	
Exterior		
Facade		
Embellishment		
Deco*		
Open space	Planning and environment	Discussion of the situation surrounding cultural heritage buildings
Street space		
The public space		
Urban		
City plan		
Zoning plan		
Landscap*		
City environment		

Table 3

Project Word	78KVU <sup>A</sup>	115KVU	138KVU <sup>A</sup>	168KVU <sup>A</sup>	173KVU	217KVU <sup>A</sup>	220KVU <sup>A</sup>	248KVU <sup>A</sup>	sum
Art	405	0	10	0	0	0	126	51	592
Architect	294	9	4	0	1	1	201	80	590
Cultur*	92	7	269	17	27	3	50	27	492
Histor*	112	3	257	2	21	1	21	6	423
Legal*protection*	61	15	52	111	28	15	47	29	358
Protect*	7	3	12	39	11	5	208	7	292
Preservation	43	0	31	2	0	1	111	4	192
Structural	30	30	15	1	10	9	10	3	108
Landscap*	1	1	2	8	0	0	87	1	100
Material	12	3	13	0	13	4	21	11	77
City environment	1	0	0	0	0	0	55	0	56
Zoning plan	14	1	17	0	0	0	16	5	53
Open space	21	0	1	0	0	0	16	9	47
Construct*	6	0	0	3	0	0	15	2	26
Facade	0	1	1	0	0	0	16	1	19
Exterior	0	0	0	0	3	0	10	0	13
Interior	0	0	1	0	0	0	10	0	11
Urban	2	0	0	0	0	3	0	3	8
City plan	5	0	0	0	0	0	0	2	7
Embellishment	2	0	0	0	0	0	2	0	4
The public space	1	0	0	0	0	0	0	0	1
Deco*	0	0	0	0	0	0	0	0	0
Street space	0	0	0	0	0	0	0	0	0

<sup>A</sup> Projects including buildings/areas with legal protection, nationally/regionally

Table 4

Project \ Word	78KSI <sup>A</sup>	86KSI <sup>A</sup>	115KSI	138KSI <sup>V</sup> 1.1 <sup>A</sup>	168KSI <sup>A</sup>	173KSI	192KSI	201KSI	217KSI <sup>A</sup>	220KSI <sup>A</sup>	237KSI <sup>A</sup>	248KSI <sup>A</sup>	SUM
Cultur*	167	10	5	260	6	6	24	10	5	7	0	6	506
Art	414	4	0	4	0	0	4	0	0	38	0	21	485
Histor*	128	4	6	257	8	11	11	0	2	32	7	6	472
Architect	286	0	15	31	0	2	1	3	4	19	3	26	390
Legal*protect*	73	26	16	34	44	16	5	15	20	18	9	21	297
Material	13	14	1	2	14	6	198	2	8	5	8	16	287
Preservation	55	2	0	43	0	0	62	0	0	78	1	0	241
Structural	52	12	15	8	0	9	4	8	9	18	6	24	165
Protect*	11	11	5	10	12	5	23	0	5	50	15	11	158
Landscap*	1	3	0	0	9	0	0	2	0	101	1	2	119
Open space	36	0	0	1	0	0	0	0	0	1	0	0	38
Zoning plan	17	0	0	1	0	1	0	2	2	1	12	2	38
Construct*	7	2	0	0	1	0	0	9	3	9	2	0	33
City environment	1	0	0	0	0	0	0	0	0	24	0	0	25
Facade	1	0	0	1	0	0	0	3	0	4	1	0	10
Embellishment	4	0	0	0	0	0	4	0	0	1	0	1	10
City plan	5	0	0	0	0	0	0	0	0	1	0	0	6
Urban	2	0	0	0	0	0	0	0	0	0	0	1	3
Exterior	0	1	0	0	0	0	0	0	0	0	0	0	1
The public space	1	0	0	0	0	0	0	0	0	0	0	0	1
Interior	0	0	0	0	0	0	0	0	0	0	0	0	0
Deco*	0	0	0	0	0	0	0	0	0	0	0	0	0
Street space	0	0	0	0	0	0	0	0	0	0	0	0	0

<sup>A</sup> Projects including buildings/areas with legal protection, nationally/regionally

Table 5

Group Word quest	False hits	Text without substance	Cultural heritage is seen as a problem	Cultural heritage is seen as a value/opportunity	Architecture
Art	405	0	0	0	0
Architect	335	78	0	3	2
Histor*	97	0	0	11	0
Cultur*	88	0	0	3	0
Legal* protect*	44	2	13	2	0
Preservation	0	0	0	5	0
Structural	0	29	1	0	0
Open space	0	0	0	2	19
<i>Build solution</i>	0	10	2	2	1
Zoning plan	0	13	1	0	0
Material	12	0	0	0	0
<i>Standard</i>	0	3	2	4	0
Protect*	3	0	1	3	0
Construct*	6	0	0	0	0
City plan	0	2	0	2	1
Urban	0	0	0	0	2
<i>Signal building</i>	0	2	0	0	0
<i>Signal building cost increase</i>	0	2	0	0	0
<i>Monument</i>	1	0	0	0	1
The public space	1	0	0	0	0
Landscap*	0	0	0	0	1
City environment	0	0	0	1	0
Embellishment	2	0	0	0	0

*The words written in italics were not among our initial primary word search.* Words that had

zero hits and thus has not been sorted by substance: façade, interior, exterior, deco\* and “street space”.