CONSTRUCTION PHASE:
PROJECT STATUS ASSESSMENT

CONSTRUCTION ITERATION 1

- **RISKS AND ISSUES ENCOUNTERED**

During the Construction Iteration 1 Phase, we were faced with the risks of becoming disorganized in our efforts to coordinate and execute the work items dictated by the objectives laid out. This, combined with the nature of the tasks and the fact that unfinished work items from previous phases were cascading into the next, also contributed to minimal work output.

- **STATUS OF RISKS AND ISSUES**

Each risk encountered was assigned a ‘Green’ status as the team made more of an effort to prioritise proper communication with regards to the assigning, handling and completion of the work items and any issues that may require the assistance of one or more team members. Also motivated by the issue of minimal work output, which was also assigned a ‘Green’ status, each team member would attempt to minimise the amount of unfinished work items that would inevitably be carried over into the next iteration through this emphasis of being more communicative with one another to resolve issues being faced with work items sooner, particularly those responsible for stalling other work items.

- **EVALUATION OF PROGRESS AGAINST OBJECTIVES**

We managed to complete resubmission of the LCAM objectives (with the necessary revisions to any documents such as the UAT scripts, supervised by Conrad and I) as well as creating new branches with the necessary documentation for the Construction Iteration phase. I was also responsible for research into the markup language, Markdown, necessary for formatting and syntax styling within Git. This allowed the group to determine its suitability for the developer documentation process. The group also worked together to locate and list any existing bugs within the application (and associated tasks in remedying them), either through the UAT walkthroughs or app usage outside of that in the Backlog bug tracker, particularly with regards to the UI/UX issues currently plaguing the usability of the application.

Both Michael and Jasmine went about researching the switching of rooms to combat some of the known issues established in the Backlog bug tracker and were still trying to find ways of alleviating these issues.

The programmer documentation, which the group has decided to abandon due to time constraints, UI/UX polish and refinement, bug fixing, as well as the Unit & Integration testing objectives were unable to be completed this iteration. This was due to a combination of conflicting schedules, leaving insufficient time to determine the degree of coordination that would be required in fixing the bugs as well as initial confusion as to how to approach them in terms of allocation and prioritization.

Through our team meeting for this iteration, we discussed working on prioritising the bugs and tasks listed in the Backlog tracker, and allocating them to team members (as well as encouraging them to assign themselves to fixing certain bugs/tasks). We hoped to have nailed down a schedule in organizing tasks to each member by the end of the week and ensure we had a majority of these bugs fixed by the Transition phase.

CONSTRUCTION ITERATION 2

- **RISKS AND ISSUES ENCOUNTERED**

Work began on the file manager this iteration beginning our long battle with Android storage security requirements though at this stage the size and scope of issue was not apparent.

UI/UX for main menu and editor menu began this iteration which highlighted how difficult even simple changes to UI can be. Multiple attempts were made to get an acceptable outcome.

- **STATUS OF RISKS AND ISSUES**

At this stage we felt we could still make Androids storage access framework work for our use case within another iteration, spoiler it didn't.

The UI requirements led us to research themes and material design and was not completed this iteration. This is not to say time was wasted as the research and lessons learnt were invaluable in resolving the issue.

- **EVALUATION OF PROGRESS AGAINST OBJECTIVES**

Despite all major bugs being addressed none of the objectives tied to UI and UX were completed to a satisfactory level. Initial UATs were done, but as other work items were not resolved they could never truly be finalized or more to the point if done would simply fail and as such were a waste of time.

CONSTRUCTION ITERATION 3

- **RISKS AND ISSUES ENCOUNTERED**

During the Construction Iteration 3 Phase, we were faced with the risk of not being able to successfully implement a File Manager library that would facilitate the use of a default location as it was already proving to be quite difficult with the existing Android implementation. Greater urgency was instilled in the task of researching and implementing multiple examples of libraries to resolve the default location issue, with everyone in the group encouraged to look into the issue to increase our chances in resolving the issue in such a way as to avoid having it bleed into the work items assigned for the next iteration.

- **STATUS OF RISKS AND ISSUES**

The default location issue was assigned a 'Yellow' status as it greatly hindered us satisfying a few of the high priority NFRs established at the beginning of the project, particularly with regards to the saving, locating of files, and file sharing capabilities - as well as progress on other work items dependent on its functionality.

- **EVALUATION OF PROGRESS AGAINST OBJECTIVES**

We maintained proper communication through the weekly meetings as well as outside of that in the push communication channel. This was motivated by the desire to avoid the issues inherent in the wavering adherence to proper communication and coordination that plagued the progress of work items in previous iterations.

Elias was assigned the tasks of carrying out the User Acceptance Testing (UAT) for file sharing, PDF export and open camera/take photo use cases as well as fixing the default file location issue carried over from the last iteration with regards to the user having to search through file system to locate saved/completed templates in both edit and inspect mode. The latter of these tasks was carried out with the assistance of Conrad and Jasmine, guided by the notion that a greater degree of teamwork for each task would yield better results. This was in keeping with wanting to avoid the pitfalls of previous iterations and maintain a degree of momentum in handling troublesome work items so as to minimise potential delays for other tasks.

While the UAT walkthrough and documentation objectives were able to be completed, the default file location issue remained elusive throughout the Iteration despite the

team's best efforts to conduct further research and discussion, and from this attempt multiple solutions which did not yield the desired results. Michael also stepped in and attempted to redirect content provider to predefined directory tree position, but found that this proved impossible with the current implementation. Our research focused on looking into alternate implementations - particularly with existing libraries - of file selector, and while we may not have found a way to use these existing library implementations to resolve the issue there were still many which did show promise and would be looked into for the next Construction Iteration. As with the previous iteration, we planned on getting more people to look into this issue and implement multiple examples until a better solution was found.

Michael was able to successfully implement a solution to remove elements from the template editor while Conrad and Jasmine made significant progress in the camera/gallery option of removing selection page after taking a photo (either taken on the spot or from the gallery) despite issues on Jasmine's end with regards to updating Gradle (which affected progress on implementing alternatives to the camera menu and alertdialog), which was ultimately solved.

Overall, the initial UAT tests/exploration were fully completed while the remaining objectives were still in varying degrees of progress, this included the following: UI/UX polish/refinement, bug fixing, Unit & Integration testing (which had yet to be started at this point), as well as UAT confirmation testing (which were started with the scripts already created and a first pass at them completed). The nature of the default file location issue, coupled with the time taken to research and implement multiple solutions, as well as the other tasks that were in the midst of completion halted progress on the remaining objectives.

CONSTRUCTION ITERATION 4

- **RISKS AND ISSUES ENCOUNTERED**

A full feature File Manager had eluded us for so long and with every library we seemed to get closer, however the default file location issue plagued every single one. Everybody was looking into the issue at this point searching for a solution.

Issues were identified with Camera URIs not being persistent causing crashes and corrupting saved inspections.

Final UATs, user manuals, signed APK, and questionnaires and feedback sheets were not completed this iteration due to all the focus being placed on file manager.

- **STATUS OF RISKS AND ISSUES**

A file manager library that had been recently updated to patch the default location issue was eventually found and implemented much to everyone's relief.

The Camera URI issue was not resolved however a time limit for a resolution was placed on it and “plan B” of avoidance was made for the risk.

An extra iteration was taken to complete the final UATs, user manuals, signed APK, and questionnaires and feedback sheets.

- **EVALUATION OF PROGRESS AGAINST OBJECTIVES**

Initial UATs were completed and final UAT confirmation tests were revised.
A couple minor UI/UX issues still needed attention.
Bug fixes were technically not completed (Gallery image URI not being persistent).
User manual was started.

Overall with the extra iteration and with all major risks having been addressed we were in a pretty good position to complete all work items and enter the transition phases.

CONSTRUCTION ITERATION 5 (ADDITIONAL ITERATION)

- **RISKS AND ISSUES ENCOUNTERED**

During the Construction Iteration 5 Phase, there were no issues or risks that appeared to plague progress on the work items/objectives.

- **STATUS OF RISKS AND ISSUES**

Since this iteration was free of any risks or issues that would hinder progress on the remaining work items for this iteration, a ‘Green’ status was assigned to the project as all work items/objectives for this iteration were completed, with the exception of the Unit & Integration testing. The latter would need to be carried over as work item into the Transition Phase of the project.

- **EVALUATION OF PROGRESS AGAINST OBJECTIVES**

As with the previous iteration, proper modes of communication were maintained throughout the weekly meetings as well as outside of that in order to complete a majority of the work items/objectives for this additional iteration.

Michael attempted some UI fixes but abandoned them once it became apparent that they were creating more issues than they were solving, thus taking up valuable time that would be needed elsewhere complete the other work items. This included modification to adding a filter to the file share menu to allow sharing exports and blueprints, as well as conducting research into and building the signed APK, which was then refactored it to comply with the Google store (also setting up testing release track).

The camera gallery was also removed for time management purposes, while the camera provider issues were fixed by Michael.

Jasmine worked on modifying the button layout to accommodate multiple screen resolutions. She also conducted research into the ideal presentation – including grammar, structure, nature of questions asked for the questionnaire and feedback sheets. These efforts yielded a word document with sample questions and tasks for user to complete, which in turn become the blueprint from which a Google form encompassing both a feedback form and questionnaire, was created.

Elias worked on researching different user manuals for other applications, mainly to gain insight into their contents and structure and carry that over into the user manual for the Inspect App. Along with the progress made in the UAT walkthroughs, this research would yield a rough draft of the user manual specifically designed with the beta testers. The user manual was designed with the intention of being as easy to read and follow as possible with the emphasis on visual cues through screenshots in favour of textual information that was kept as concise as possible.

On the documentation side of things, Elias and Michael both worked on completing the Project Status assessment after careful examination and evaluation of the progress against objectives as well as analysis of risks encountered and minimised/overcome during each Construction Iteration - essentially expanding upon those already summarised in the Construction Iteration plans.

Conrad revised the UAT scripts and completed successful walkthroughs for each. The Inspect App was able to successfully create a template, add/remove elements (including taking photos and adding it to the form), save the template, edit the template, carry out an inspection, view and save the completed form as a PDF and share it with the client.

Overall, the objectives involving the initial UAT testing/exploration, the UI/UX polish and refinement, the bug fixing, the documentation and UAT confirmation testing were completed during this additional iteration. The only remaining work item to be carried over into the Transition Phase was the Unit & Integration testing.