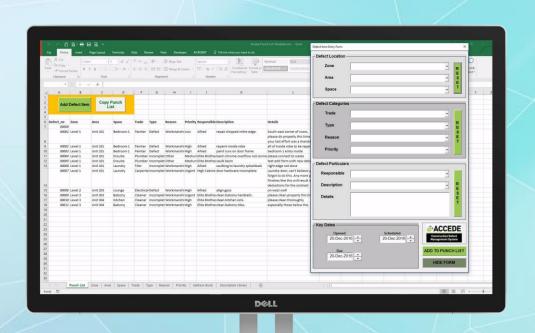


# Getting started: Try our simple Excel Punch List Template with Userforms



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#### 1. Introduction & Background

Adopting new business processes is a challenging step for most businesses, especially when the change incorporates new technology and unforeseen expenses. Even though management often encourage innovation many managers are cautious when it comes to approving expenditures on new business systems, especially when it involves technology they may not be familiar or comfortable with.

The manual generation and management of Punch Lists remains popular when managing quality control in the close out stages of construction projects. The manual generation of Punch Lists often incorporates hand written notes transposed into excel spreadsheets which are sorted and emailed to responsible sub-contractors with clumsily attached and poorly referenced Smartphone photos.

This manual re-handle of defect information has a surprisingly high cost and often little known cost borne by the main contractor because they have "always done it that way".

Research led by Professor Marton Marosszeky at the Australian Centre for Construction Innovation (University of NSW) identified the following in respect of the impact of defects:

 On average, the total cost of defect rectification ranges between 4% and 6% of construction expenditure.

#### 1. Introduction & Background (cont'd)

 The rectification process is highly management intensive due to the requirement for checking, recording, coordinating, reporting and signing-off reworked activities.
 The indirect management costs are as much as direct rectification costs. The administrative cost is substantially borne by head-contractors while the direct cost of rework is borne by the subcontractors.

In summary, average cost of defect rectification using traditional methods is 5% with half of this (2.5%) borne by the head contractor in administrative burden.

Consider a \$20M construction project; total cost of defect rectification is (on average) \$1M with the main contractor's cost being (on average) \$0.5M. This is a significant cost but one that is rarely costed in the closing stages of a project leading to project handover and completion.

Even though tablet-based defect management systems are widely available, many main contractors are reluctant to implement this time saving technology and persist with manual punch listing processes regardless of the demonstrated productivity benefits and demonstrable return on investment (refer to our White Paper "Calculate the Return on Investment (ROI) from using a tablet-based Defect Management System").

#### Simple Excel Punch List Template

#### 1. Introduction & Background (cont'd)

We have often speculated the reasons for this and have concluded they most likely are:

- A. Cost of the new technology/system
- B. The time/hassle associated with managing change
- C. Lack of familiarity with the new technology

This got us thinking about what we could do to overcome these legitimate obstacles.

#### 2. Excel Punch List Templates

Given the popularity of and familiarity with Excel, especially in existing manual defect management processes, we considered this the best way forward to give main contractors a taste of the new technology with no cost or risk. A Google search for "free punch list templates" reveals numerous alternatives of varying complexity and we encourage you to consider if any of these provide a workable solution.

Clearly, we'd like you to embark on a free trial of the **ACCEDE** Defect Management System, however this only addresses the cost obstacle but not the time/hassle of change management or any concerns about new technology. So our solution is an Excel-based data entry userform that:

- contains the key defect item elements you should be capturing
- has a similar look and feel of the ACCEDE Agent (iPad app)
- improves data entry productivity
- generates a simple punch list
- captures data in appropriate formats for direct upload to the ACCEDE Defect Management System should you wish to progress to a free trial



#### 2. Excel Punch List Templates (cont'd)

- requires minimal change to existing manual punch listing processes
- will improve data entry productivity.

Unfortunately, our Simple Excel Punch List Template focuses more on generating rather than managing Punch Lists so the productivity gains from its use are not as great as those likely from using a tablet-based defect management system. The good news though is it is free, simple to use and will save time should you wish to proceed with a free trial of **ACCEDE**.

#### Please note:

The Simple Excel Punch List Template spreadsheet, userforms and macros have been developed and tested using:

- Excel 2016 MSO (64-bit version) and an external monitor of 21.5 inches (Windows 10 Pro)
- Excel 2010 MSO (32-bit version) SP2 on a Notebook with a 12.1 inch screen (Windows 10 Pro)

Users with previous versions of Excel and smaller screen sizes may experience problems viewing and using the spreadsheet.

#### A. Open the file "Simple Punch List Template.xlsm"

We suggest:

- before opening, start a new Excel session
- after opening, rename by replacing "Template" with your project name (or an abbreviation)
- having only this file open when working on your Punch List.

#### **B.** Overview

The spreadsheet contains macros and you may see a security notice - enable macros to continue and the spreadsheet will open.

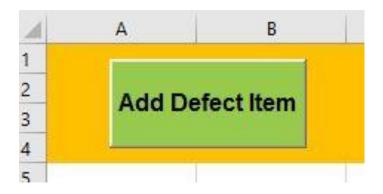


#### B. Overview (cont'd)

On opening, you will arrive on the Punch List tab. This is where defect items will be entered via the Userform (i.e. a custom graphical pop-up window that collects and processes input from the user in a Microsoft Office Program – per

http://users.speakeasy.net/~mtangard/userforms.html visited 20 September 2016).

The user form (Defect Item Entry Form) is revealed by clicking the green button "Add Defect Item":



As defect items are added, they will appear in a sequential list on the "Punch List" tab. Before adding defects, you will need to populate the drop down lists used by the Defect Item Entry Form to speed up data entry.

#### B. Overview (cont'd)

No doubt you are curious to see the Defect Item Entry Form so let's take a quick look by clicking the "Add Defect Item" button. The form can be repositioned on your screen by positioning your mouse pointer on the white section at the very top,



right click/hold and drag to the desired position before releasing.

The Defect Item Entry Form is divided into the following sections:

- a) Defect Location
- b) Defect Categories
- c) Defect Particulars
- d) Key Dates



#### B. Overview (cont'd)

Other key elements of the form are:

i) "Drop Down" selectors - to select values from prepopulated lists to save data entry time e.g.



ii) Text Box - enables the user to enter free-form text e.g.



iii) Reset" Buttons - to clear section field values e.g.



#### B. Overview (cont'd)

iv) "Date" spinners - date values that default to today's date and allow for easy increments or decrements of 1 day e.g.



v) "Update Punch List" button - copies all values entered to the next line of the Punch List spreadsheet e.g.



Please note there is no data validation or checks made prior to update. That is, the Punch List spreadsheet will be updated with those values entered via the Defect Item Entry Form even if blank.

iv) "Hide Form" button - to close or hide the Defect Item Entry Form and reveal the Punch List spreadsheet listing of defect items entered e.g.



#### B. Overview (cont'd)

The form can also be closed by clicking the "X" in the top right corner of the header e.g.



Before you begin entering defects, the drop down lists need to be customised for your project. Please hide or close the form and return to the Excel workbook.

#### C. Customising "Drop Down" Selectors

1. Defect Location (Project Structure or 3-Level Hierarchy)

Identifying the location of the defect is critical to communicating the issue to the responsible subcontractor or party responsible for rectification. The Defect Location section of the Defect Item Entry Form provides the means to identify the location of each defect item.

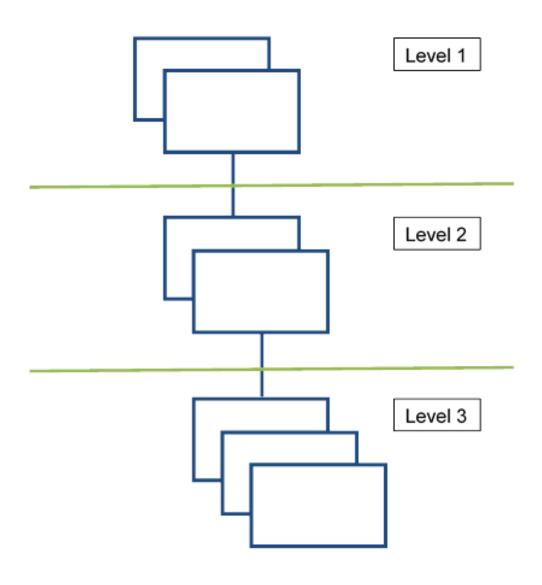
- C. Customising "Drop Down" Selectors (cont'd)
  - 1. Defect Location (Project Structure or 3-Level Hierarchy) (cont'd)

Identifying the location of the defect is critical to communicating the issue to the responsible subcontractor or party responsible for rectification. The Defect Location section of the Defect Item Entry Form provides the means to identify the location of each defect item.

One of the most important decisions made when configuring a project in ACCEDE is how to name and structure headings. Headings are the entities we use to describe a project's structure. The Defect Item Entry Form is also based on this principle although we have applied generic heading names of Zone, Area and Space.

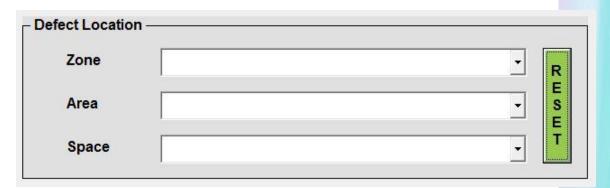
The first thing to note about headings - is that there are three of them. You need to describe your project in a three-level hierarchy.

- 3. Using the "Simple Excel Punch List Template" Userform (cont'd)
- C. Customising "Drop Down" Selectors (cont'd)
  - Defect Location (Project Structure or 3-Level Hierarchy) (cont'd)



- C. Customising "Drop Down" Selectors (cont'd)
  - 1. Defect Location (Project Structure or 3-Level Hierarchy) (cont'd)

Let's start by considering the example data contained in the spreadsheet tabs Zone, Area and Space. These tab names correspond with the titles of the three drop down selectors in the Defect Location Section of the Defect Item Entry Form.



That is, Zone, Area and Space are the three headings used in the Defect Item Entry Form. The example data included in the spreadsheet is based on a single building, multi-level residential apartment project.

- C. Customising "Drop Down" Selectors (cont'd)
  - 1. Defect Location (Project Structure or 3-Level Hierarchy) (cont'd)

#### Please note:

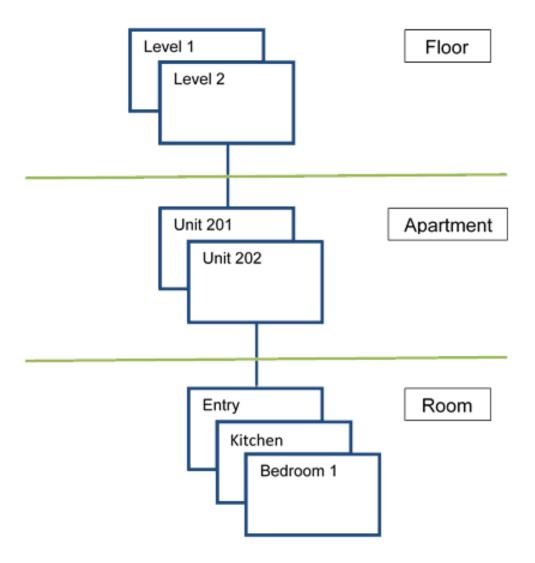
- i) The lists provided in the Zone, Area and Space tabs are for guidance only and are not exhaustive for the example project.
- ii) Heading names are not editable.
- iii) You will need to consider your project carefully to ascertain equivalent Headings and appropriate lists.
- iv) Zones, Areas and Spaces contained in Column A of the respectively named tabs in the workbook populate the drop down selectors in the Defect Item Entry Form.

The following table provides additional information about the example project and the relationship with the Headings:

7	Zone (Heading 1)	Area (Heading 2)		Space (Heading 3)	
Ed	quivalent of Floor or Level	Equivalent of Apartment or Unit		Equivalent of Room	
	one tab contains all e level/floors of the project	Area tab contains the apartments/units on each level/floor		Space tab contains the rooms within each apartment/unit	
4	А	4	A	4	A
1	Zone	1	Area 💌	1	Space
2	Basement Car Park	2	CP001	2	Entry
3	Ground floor	3	CP002	3	Hall
4	Level 1	4	CP003	4	Kitchen
5	Level 2	5	CP004	5	Dining
6	Level 3	6	CP005	6	Lounge
7	Level 4	7	CP006	7	Bedroom 1
8	Level 5	8	CP007	8	Bedroom 2
9		9	CP008	9	Bedroom 3
		10	CP009	10	Ensuite
		11	CP010	11	Bathroom
		12	Foyer	12	Toilet
		13	Common Area	13	Study
		14	Unit 101	14	Laundry
		15	Unit 102	15	Balcony
		16	Unit 103	16	Roof Terrace
		17	Unit 104	17	
		18	Unit 201		
		19	Unit 202		
		20	Unit 203		
		21	Unit 204		
		22	Unit 301		

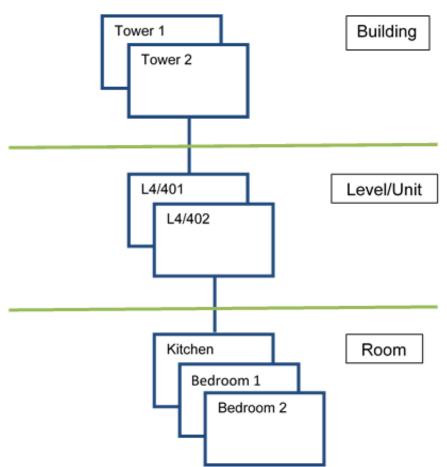
- C. Customising "Drop Down" Selectors (cont'd)
  - 1. Defect Location (Project Structure or 3-Level Hierarchy) (cont'd)

Represented diagrammatically, the example project would be:



- C. Customising "Drop Down" Selectors (cont'd)
  - 1. Defect Location (Project Structure or 3-Level Hierarchy) (cont'd)

The important thing to remember, is that there are always three headings in the hierarchy. You may have to use your imagination a little to come up with a three-level structure. If you think you need four, combine a couple. For example, like this ...



- C. Customising "Drop Down" Selectors (cont'd)
  - 1. Defect Location (Project Structure or 3-Level Hierarchy) (cont'd)

A key concept is that it's these lowest level entities (Heading 3), in this example Room, to which defects are assigned.

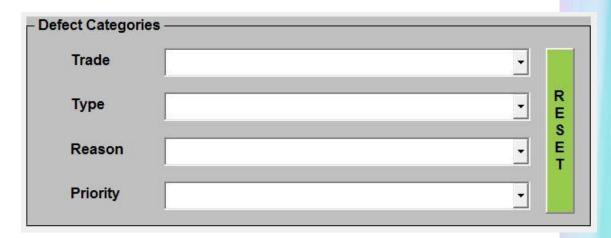
Defects are not assigned at a higher level. Here's a tip though - one way to accommodate this requirement would be to include a Room named "All Level" and assign defects to it.

We suggest you document your project headings in the following table for future reference before you proceed with customising the Zone, Area and Space tabs/lists in the workbook.

	Heading 1	Heading 2	Heading 3
Per Form	Zone	Area	Space
Equivalent to			

- C. Customising "Drop Down" Selectors (cont'd)
  - 2. Defect Categories

Categories are used to group similar items for later reporting and analysis. The Defect Item Entry Form provides 4 categories as follows:



Drop down selectors are used to assign the category for each defect item. These selectors are populated from lists contained in the workbook tabs correspondingly named:



- C. Customising "Drop Down" Selectors (cont'd)
  - 2. Defect Categories (cont'd)

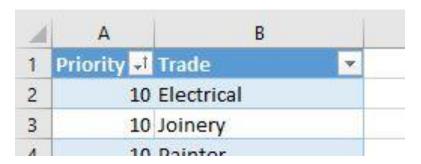
To save you time we have pre-populated the lists in each of these tabs. You can customise these lists by editing (overwriting/deleting/ adding new) the text entered.

As with the Headings tabs/lists please note:

- a) The lists provided in the Categories tabs are for guidance only.
- b) Category names are not editable.
- c) Please ensure completeness of lists and delete any list content not relevant to your project.
- d) Please overwrite as required example lists in the Type, Reason, Priority tabs from cell A2 do not delete, modify or otherwise change cell A1.
- e) Drop down selectors will display lists in the sequence they appear in the Zone, Space and Area tabs – do not leave blank/empty rows.
- f) Lists can be as long as you require and can manage.

- C. Customising "Drop Down" Selectors (cont'd)
  - 2. Defect Categories (cont'd)

You will see an additional column in the Trades tab headed "Priority".

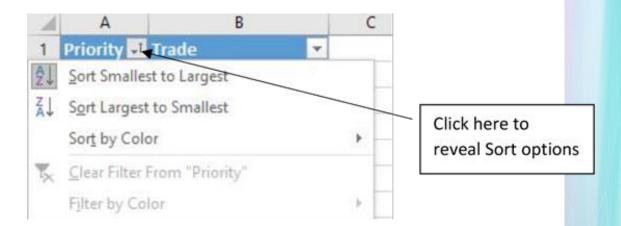


If you have a long list of trades this column can be used to prioritise the sequencing or order in which they appear in the drop down selector on the Defect Item Entry Form.

To modify the sequencing priority:

- a) delete any trades in the list that are not applicable to your project (delete entire row so as not to leave any blank cells in Columns A & B)
- b) add new or amend/overwrite existing trade descriptions (in Column B)

- C. Customising "Drop Down" Selectors (cont'd)
  - 2. Defect Categories (cont'd)
  - c) update priority numbers (Column A) ensuring all Trades in the list have a corresponding priority number (lower numbers give higher priorities when sorting by smallest to largest)
  - d) Click on the down arrow to the right of "Priority" in cell
     A1



- e) Select "Sort Smallest to Largest" and release
- f) Review and repeat steps a) to e) until the list contains only the Trades applicable to your project in the sequence you require.

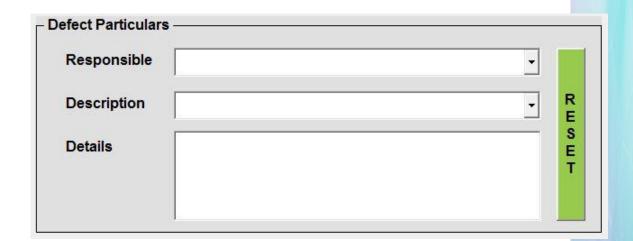
#### C. Customising "Drop Down" Selectors (cont'd)

#### 3. Defect Particulars

Having located and categorised the defect item, now is the time to record it's particulars, those being:

- The party or subcontractor Responsible for rectifying the defect item,
- ii) A summary Description of the defect,
- iii) Any other Details necessary to further clarify the defect location and issue to the responsible party.

Defect Particulars are entered into this section of the Defect Item Entry Form shown below:



- C. Customising "Drop Down" Selectors (cont'd)
  - 3. Defect Particulars (cont'd)

As you can see, Responsible and Description are chosen through drop down selectors whilst Details accepts free form text (maximum 255 characters). Drop down selectors are populated from lists contained in the following workbook tabs:



**Responsible** party or subcontractor details are entered on the "Address Book" tab and **Description**s are entered on the "Description Library" tab. Please note:

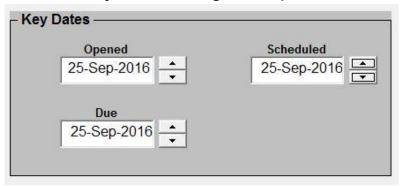
- a) The lists provided in the "Address Book" and "Description Library" tabs are for example purposes only.
- b) Please ensure completeness of lists and delete any list content not relevant to your project.

- C. Customising "Drop Down" Selectors (cont'd)
  - 3. Defect Particulars (cont'd)
  - Please overwrite as required example lists in the "Address Book" and "Description Library" tabs from Row 2 – do not delete, modify or otherwise change Row 1.
  - d) Drop down selectors will display lists in the sequence they appear in the "Address Book" and "Description Library" tabs do not leave blank/empty rows.
  - e) Subcontractors in the "Address Book" tab are fictitious. Please delete Rows 2 to 5 and enter details for those with defect rectification responsibility on your project. It is good practice to complete all columns however critical columns are Priority (A), Name (B) and Email (L). Only column B (Name) is used in the drop down selector on the Defect Item Entry Form.

- C. Customising "Drop Down" Selectors (cont'd)
  - 3. Defect Particulars (cont'd)
  - f) Some of the Descriptions in the "Description Library" have been truncated and there are far too many to be practical when scrolling through the drop down selector. We suggest you take some time to review and delete/amend as appropriate for your project as this will give rise to increased productivity when entering Defect Particulars.
  - g) Both the "Address Book" and "Description Library" lists can be prioritised so as to display most common or used Responsible party/subcontractor or Description towards—the top of the list revealed by the drop down selectors. To modify the sequencing priorities, refer to guidance provided in 3.2 Defect Categories, steps a) to f) (above).
  - h) Lists can be as long as you require and can manage.

#### D. Key Dates

The three key dates fields default to the current date and can be adjusted using the Spinner's as required.



Key Dates are as follows:

**Opened** – the date of the inspection or when the defect item was first identified.

**Scheduled** – to notify the responsible party or subcontractor the earliest date they can commence rectification work. Useful where multiple trades are required to rectify a defect e.g. painter can only start once carpenter/plasterer have finished.

**Due** – the date the responsible party is to complete their rectification work by.

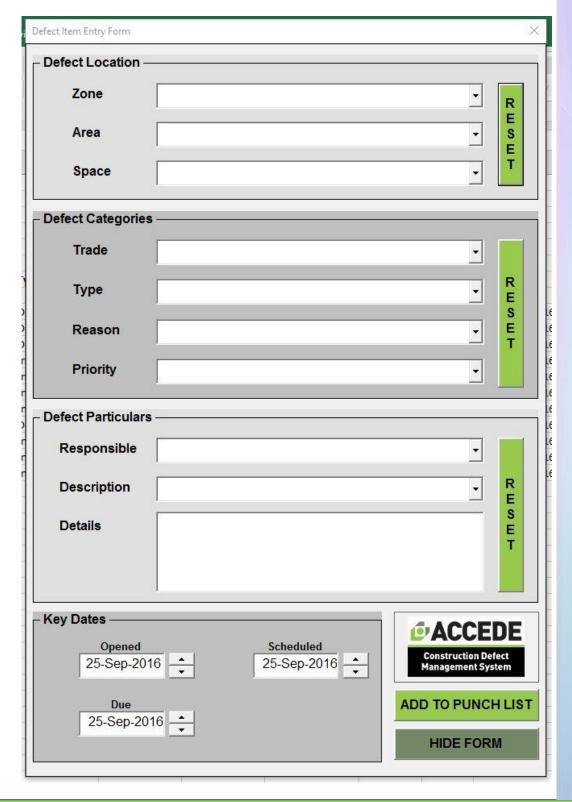
To increase date, click the up arrow button and to decrease date, click the down arrow. Each click will change the date by one day

#### E. Completing the Simple Excel Punch List Template Userform

Select the "Punch List" tab and click the green "Add Defect Item" button (top left corner of the worksheet). The Defect Item Entry Form will appear.

The Defect Item Entry Form (see the following page), as the name suggests, caters for the entry of one defect at a time. We suggest you complete as follows:

- a) Start at the top and work your way to the bottom, choosing the location, categories, particulars and key dates for the Defect Item identified during inspection.
- b) Enter defect item data in all form fields.
- c) Click the down arrows on the right of each drop down selector to reveal your custom lists.
- d) Save time scrolling through long custom lists by typing the first letter of the entry you are searching for.
- e) Use the "Reset" buttons to remove invalid or incorrectly entered/selected data.



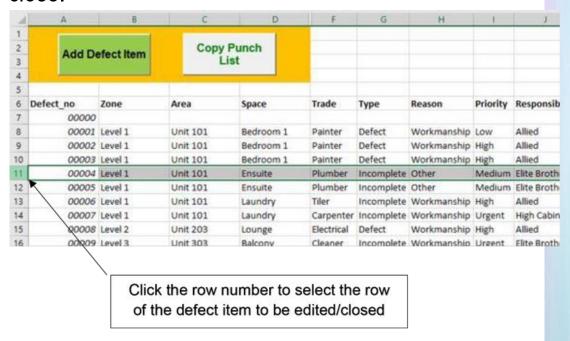
#### E. Completing the Simple Excel Punch List Template Userform (cont'd)

- f) Review all data entered and click the green "Add to Punch List" button (lower right corner) to add defect item to the Punch List worksheet. Each defect item is numbered (sequentially commencing at 00001) when added to the Punch List.
- g) Clear sections as required and complete steps a) to f) for each defect item identified during inspection.
- h) When all defect items are entered, click the "Hide Form" button to reveal the Punch List.
- i) Do not delete rows, sort, edit cells directly or otherwise change the Punch List worksheet.
- j) To edit a defect item in the Punch List, please refer to F. Edit and/or Close a Defect Item in the Punch List (below).
- k) If you do need to sort, group or otherwise edit the Punch List, please refer to **G. Create a Copy your Punch List** (below).

#### F. Edit/Close a Defect Item in the Punch List

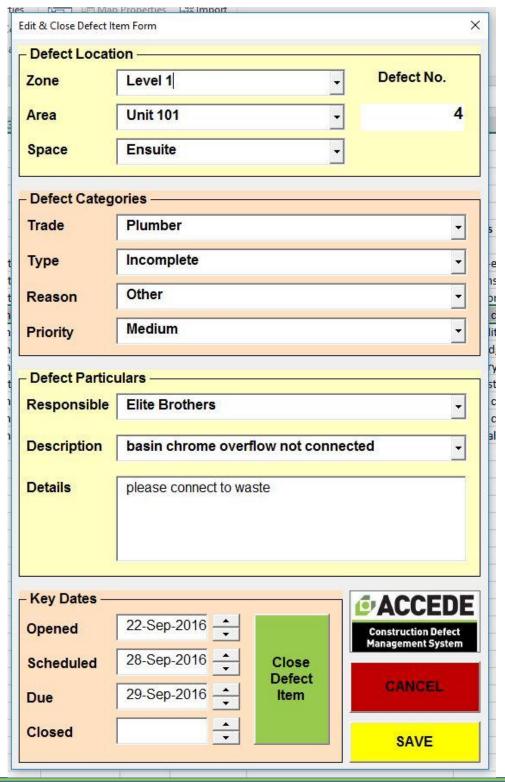
In the instance you identify an incorrect or incomplete entry in the Punch List, it is possible edit and update any Defect Item via the Edit & Close Defect Item Form.

To activate the form from the Punch List tab by selecting the entire row of the defect item you wish to edit and/or close.



The Edit & Close Defect Item Form (see over page) is similar to the Defect Item Entry Form except that it:

contains the information previously entered for the defect item,

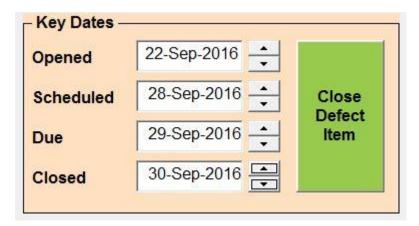


- F. Edit/Close a Defect Item in the Punch List (cont'd)
  - displays the Defect Number assigned when created, and
  - has the option to close the defect item.

We suggest you activate and complete the Edit & Close Defect Item Form as follows:

- a) Identify the defect item you want to edit/close and activate the form (i.e. select row)
- b) Working from the top to the bottom update only those fields you wish to change/update using the drop down selectors.
- c) To mark the defect item as closed (i.e. after rectification work has been signed-off), click the green "Close Defect Item" button in the Key Dates section (see next page). This will insert the date which you can adjust with the up/down arrows as required. Editing Defect Items can be done without closing them at the same time and similarly a Defect Item can be closed without changing any of the data previously entered.

F. Edit/Close a Defect Item in the Punch List (cont'd)



Note: Closing a defect item will not remove it from your Punch List – it just enters a date.

c) To Cancel any changes and/or close the Edit & Close Defect Item Form, click the red "CANCEL" button. No changes will be saved in the Punch List.



 d) To update and save changes made, click the yellow "SAVE" button. All changes made will be updated in the Punch List.



- F. Edit/Close a Defect Item in the Punch List (cont'd)
  - Note that no record of changes or audit trail is kept of Defect Item entries in the Punch List.
- e) Repeat steps a) to d) for remaining Defect Items that require editing and/or closing.

#### G. Create a Copy of your Punch List

You will recall from E. (i) above that you must not delete rows, sort, edit cells directly or otherwise change the Punch List worksheet. However, in managing your Punch List you will periodically need to copy, sort and edit it to:

- Send Defect Item lists to responsible parties or subcontractors (i.e. for notification and other purposes)
- Analyse responsible party or subcontractor performance
- Assess defect management status
- Create reports for management

Acknowledging that Punch List copying and sorting will be a regular requirement throughout the inspection and defect rectification period of your project, we have simplified this process.

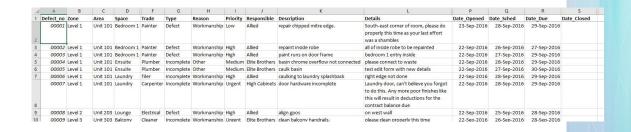
You have likely noticed the white "Copy Punch List" button on the Punch List worksheet (to the right of the "Add Defect Item" button – see next page):

G. Create a Copy of your Punch List (cont'd)



The following will happen with a single click of this button:

- a) A new workbook opens (Book1.xlsx if in a new Excel session)
- b) The Punch List header and all Defect Items in the Punch List are copied and pasted into the new workbook and appropriately formatted and worksheet tab renamed "Punch List Data"



- G. Create a Copy of your Punch List (cont'd)
  - c) A copy of the Punch List Data worksheet is created, formatted as a sortable table and the tab renamed "Punch List Table".



Please ensure you save the new workbook with an appropriate name (e.g. PL\_ProjectName\_dd-mm-yy.xlsx) for future reference. With your Punch List data copied and saved, you are free to copy, sort, format and edit the Defect Items and distribute as you see fit.

Just remember to return to the original spreadsheet (renamed Simple Punch List Template.xlsm) to add new, edit or close Defect Items.

#### 4. Conclusion

We hope this Punch List Template helps to give you the flavour of what is possible by incorporating technology into your defect management processes. As you might expect, regardless of how you format a spreadsheet or whatever other Excel bells and whistles are incorporated (i.e. userforms, macros, VBA etc.) it will be a poor imitation of an enterprise Defect Management System solution.

Recording the defect and creating the Punch List using this spreadsheet template is a great first step in making a manual system more efficient but Excel spreadsheets will rarely be the optimal solution, other than on small projects. The reality is that real efficiencies only arise by simplifying, encouraging and automating collaboration with project stakeholders and especially responsible parties and subcontractors.

Punch Lists generated by and stored in Excel remain cumbersome requiring time consuming intervention to distribute via email with poorly referenced photo attachments and requiring further manual updates when rectification is notified. Reporting and analysis of defect information using spreadsheets, especially on large projects, is seldom done properly, robbing managers of valuable information that could lead to better decision making on future projects.

#### 4. Conclusion (cont'd)

Worse still is that inefficient or cumbersome defect management processes tend to encourage a lack of compliance and in a worst case scenario project quality may suffer, giving rise to irreparable reputational damage.

Nonetheless, we encourage you to try this spreadsheet template on your next project for the first 100-200 defect items (before you start distributing to subcontractors) to see if it saves you some data entry time.

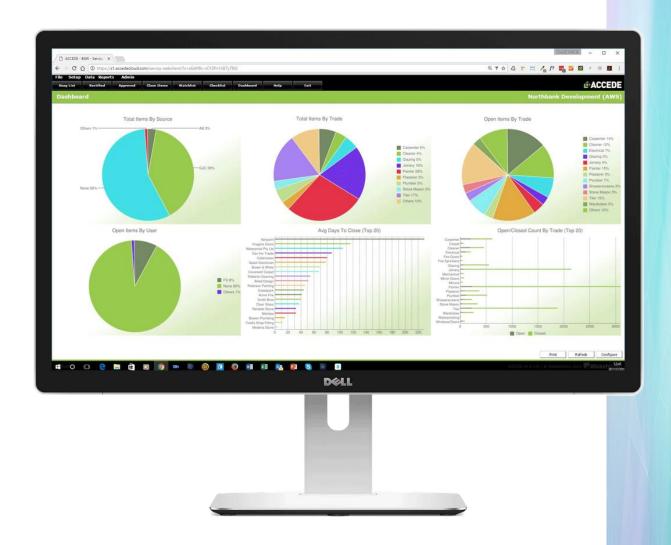
If it does, please contact us regarding a no obligation, free trial of **ACCEDE**. We'll set up your project in the **ACCEDE Defect Management System** using the data you've already captured in the spreadsheet tabs (Zone, Area, Space, Trade, Type, Reason, Priority, Address Book and Description Library) and even upload the defect items already captured. All you need to do is email us your spreadsheet.





#### 4. Conclusion (cont'd)

Then for a minimum of 30 days at no cost, you can continue your project close out quality processes using **ACCEDE** to get a proper feel for the time/cost saving and project quality benefits from using a tablet-based defect management system. If at the end of your free trial you decide not to purchase a license then no problem – we'll download all your data and return it to you at no charge.



#### Good luck and happy defecting!

Request Free Trial

**Email your Spreadsheet** 

Download Brochures

Help



#### DISCLAIMER

#### **Important Notice**

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