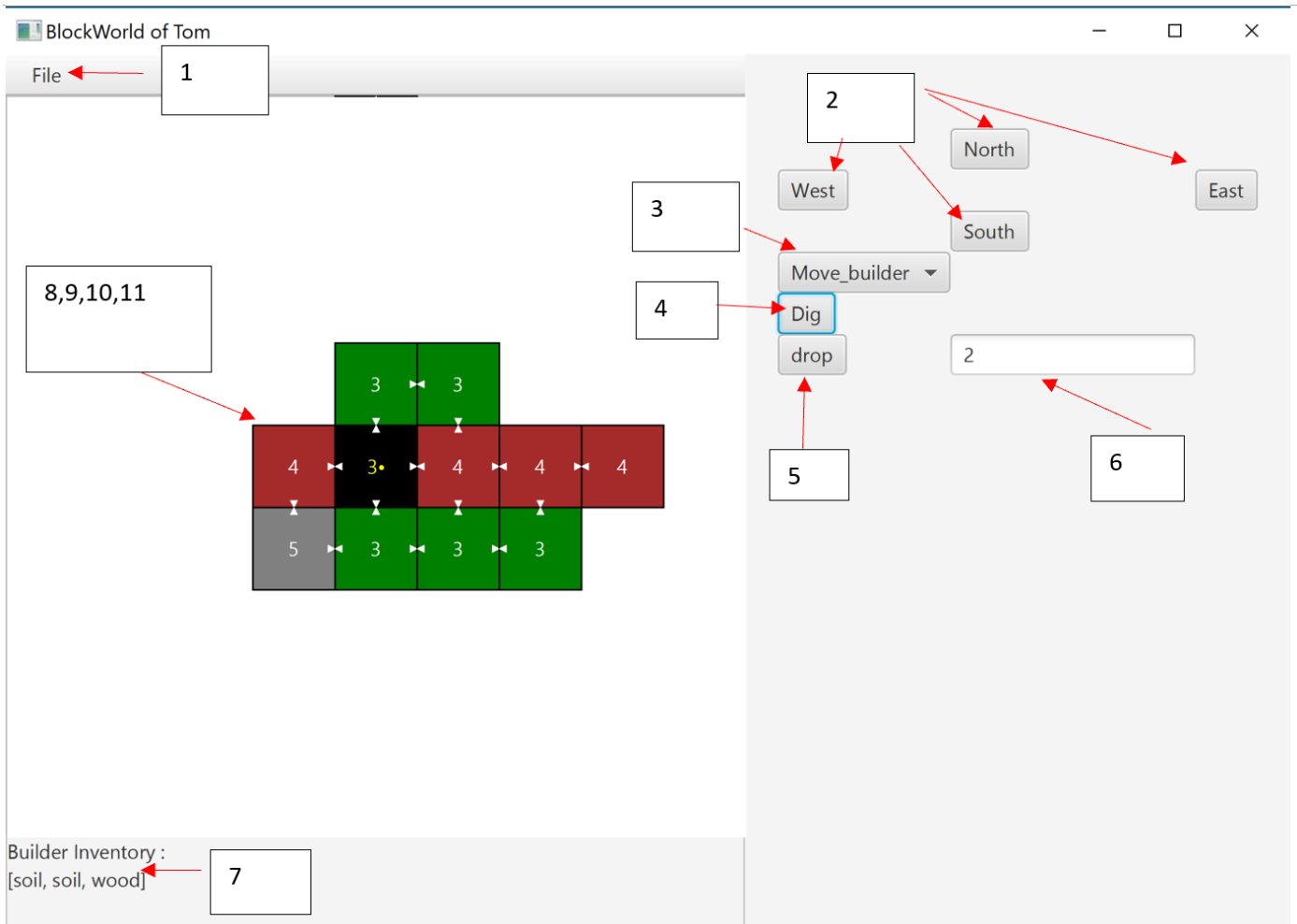


Overall annotated screen sample:



1. File menu which has load and save options (with save disabled before any map is loaded).
2. Direction controls, combined with 3(choice-box), allows the user to move builder or block in the chosen direction (based on button clicked). Alert boxes will be trigger if action is invalid.
3. Choice-box to select whether to move Builder or Block (by default when launched, move_builder is chosen).
4. Dig button to make Builder dig on current tile. Alert boxes will be trigger if action is invalid.
5. Drop button to drop block on builder's inventory(usage is combined with 6(text-field)).
6. Text-Field to specify which index to drop block at. **NOTE: the index starting counting from 0.** I.E: if first item in builder inventory is chosen, then 0 should be entered
7. Display builder's current inventory(can display more than 14 blocks with the scroll).
8. Builder (yellow dot always positioned at the centre of the Display map)
9. White triangles show available exits on tiles
10. Numbers are total number of blocks on the tiles
11. Tile colours:
 - green -> grass
 - brown -> wood
 - black -> soil
 - grey ->stone

Load stage of the GUI:

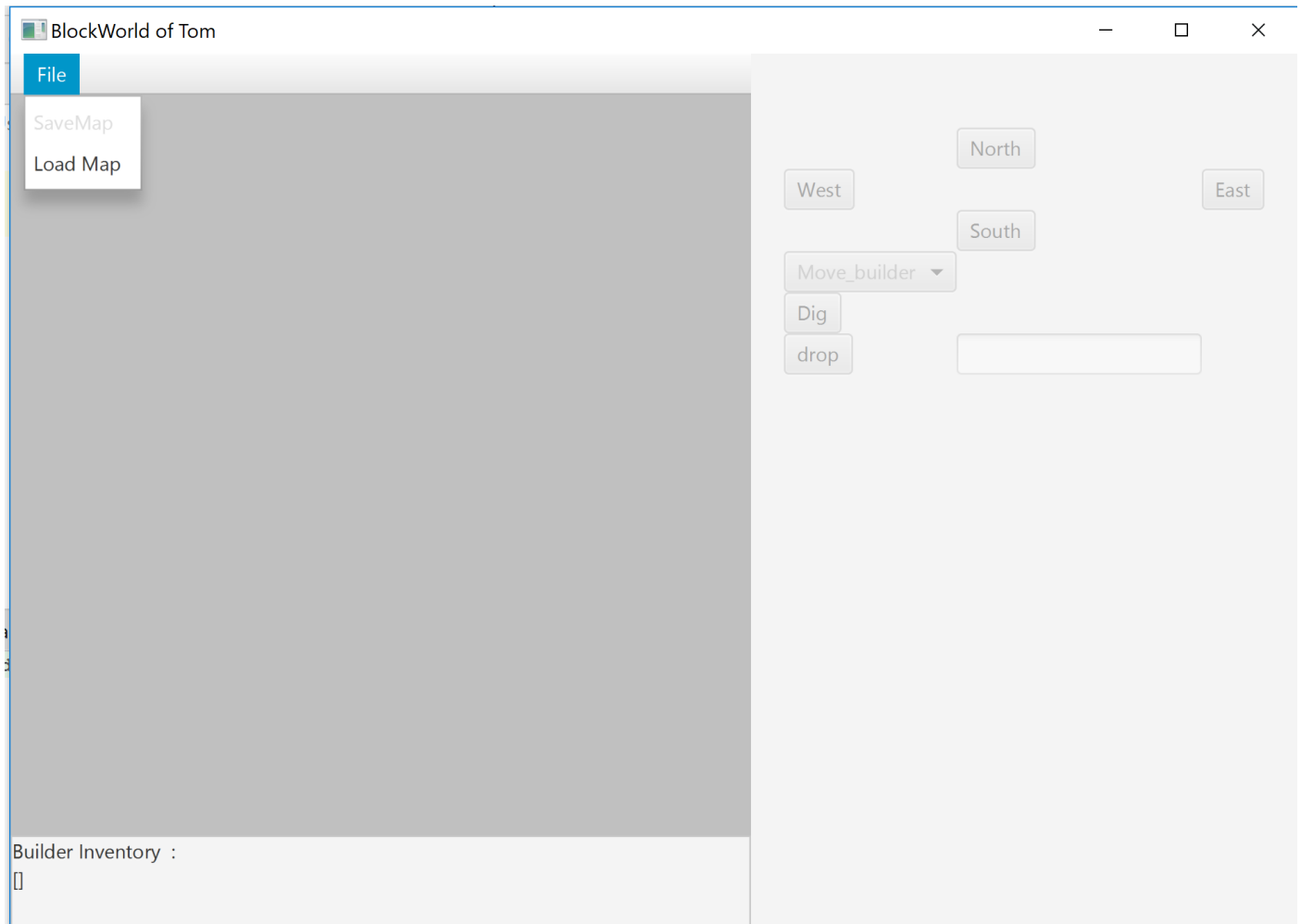


Figure 1: program on start-up

It can be seen that when the program is first launched, all action Buttons (on the right hand-side of the screen) are disabled and the Save-Map option in the file menu is also disabled as no map is loaded at this stage.

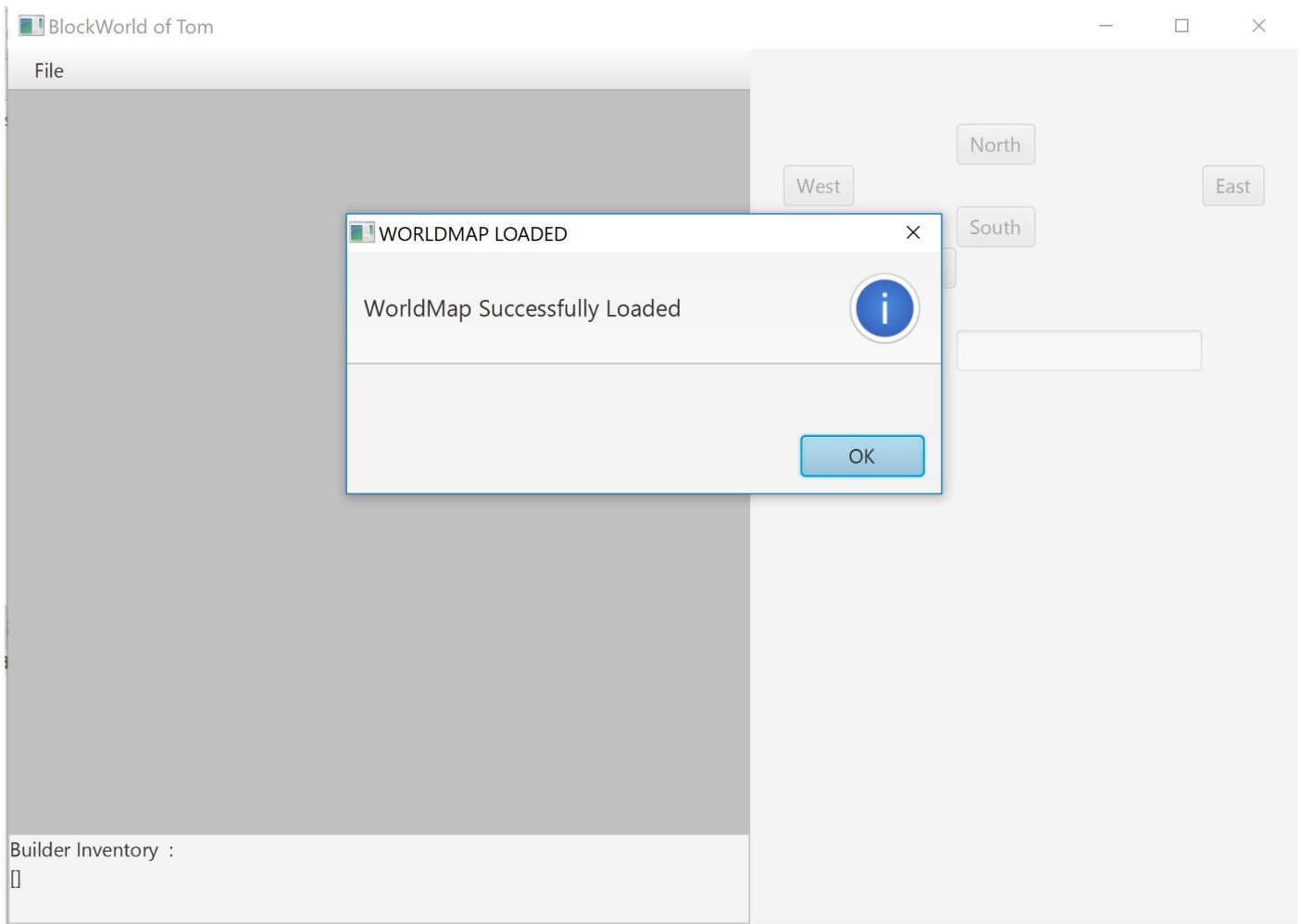


Figure 2: When Load Map is selected and the map is successfully loaded

After the user had chosen the option Load Map in the file menu(at the top left hand corner of the GUI), if the map is successfully loaded, then an alert box with information will be shown(as seen in Figure 2) indicating the user that map is loaded successfully.

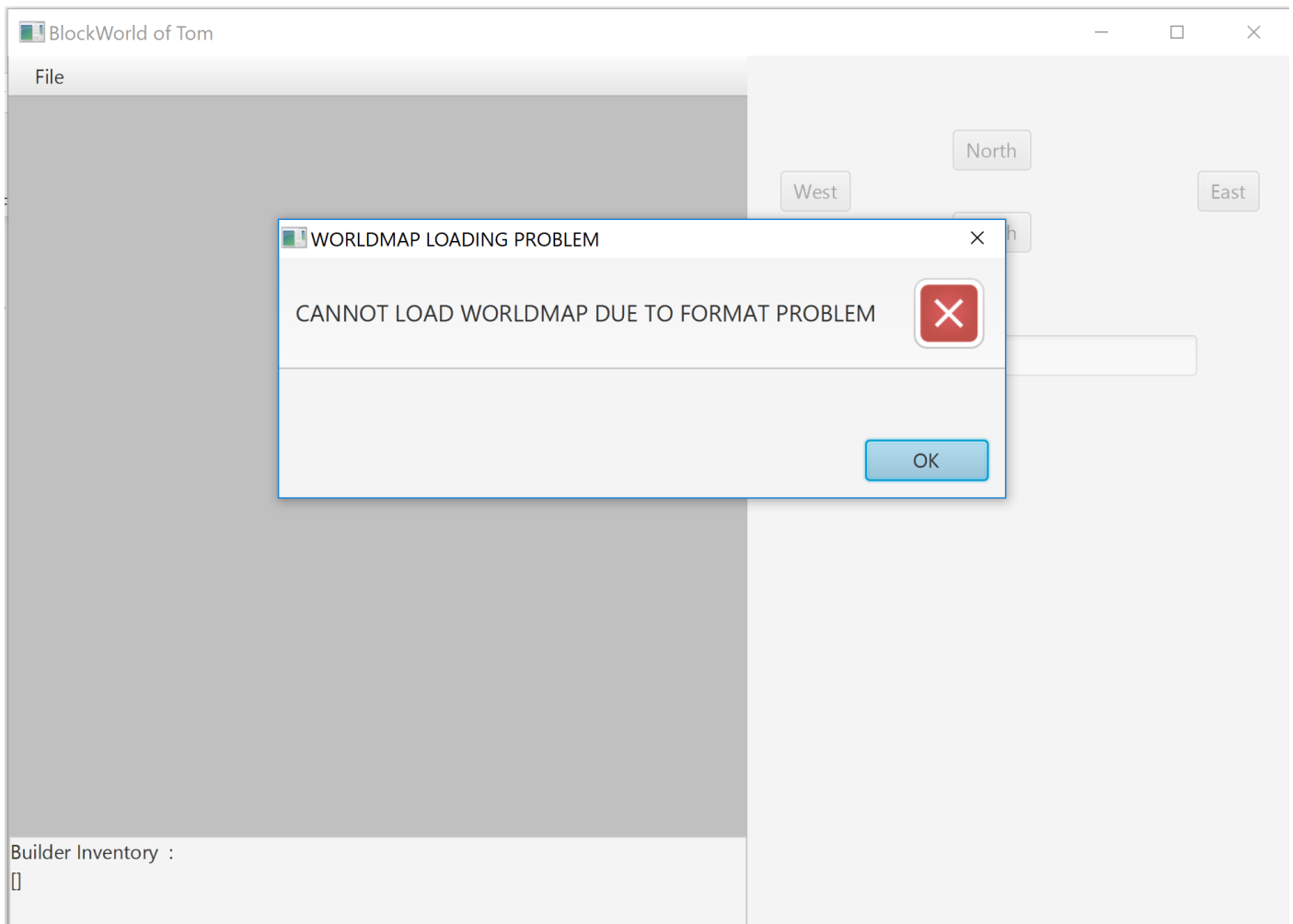


Figure 3: When Load Map selected and the map's format is incorrect

After the user had chosen the option Load Map in the file menu(at the top left hand corner of the GUI), if the map chosen has an incorrect format, then an alert box with error will be shown(as seen in Figure 3) indicating the user that the chosen map has the incorrect format.

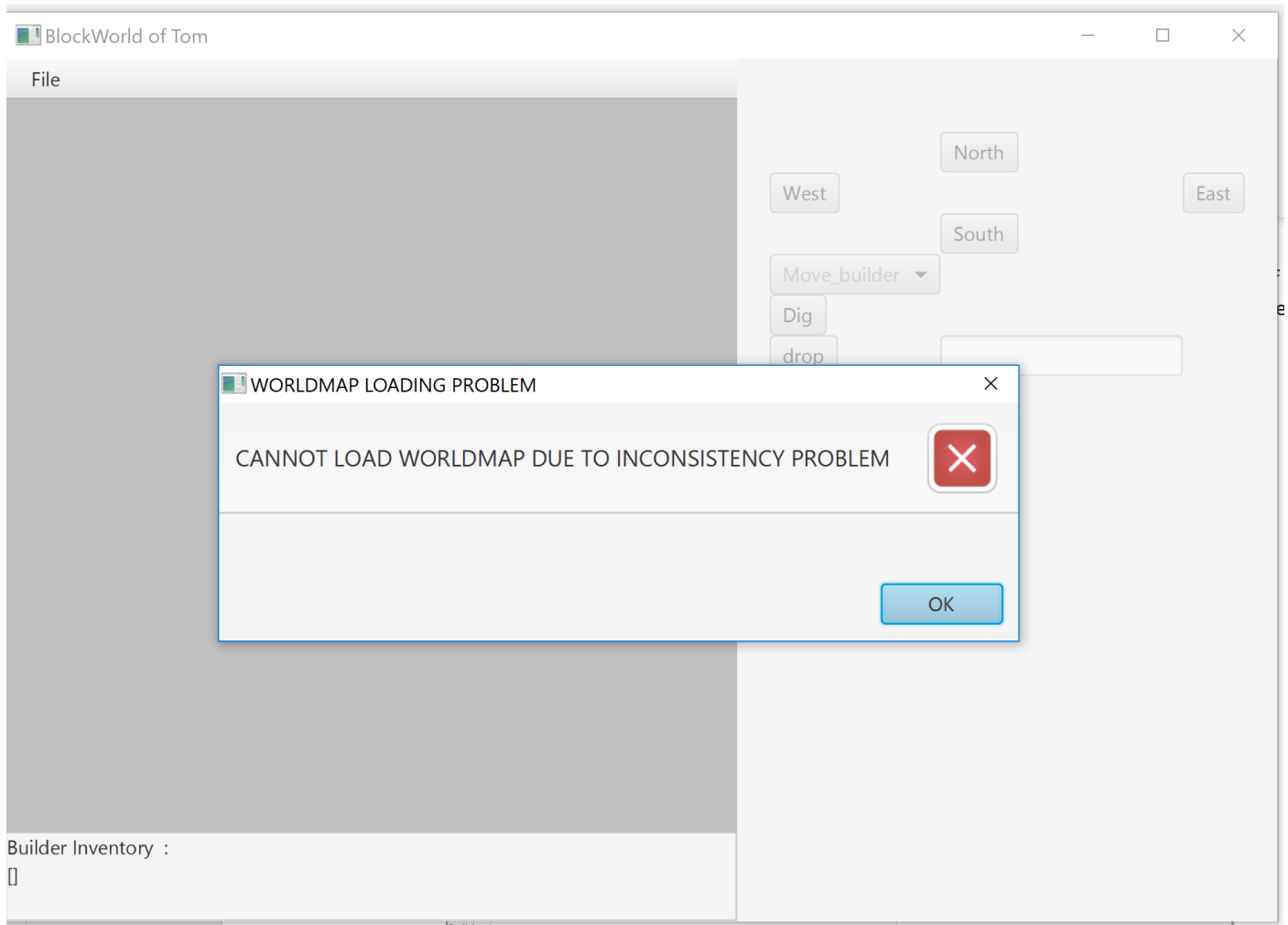


Figure 4: When Load map selected, and the map is inconsistent

After the user has chosen the option Load Map in the file menu (at the top left hand corner of the GUI), if the map chosen has the correct format but the tiles are inconsistent, then an alert box with error will be shown(as seen in Figure 3) indicating the user that the chosen map is inconsistent.

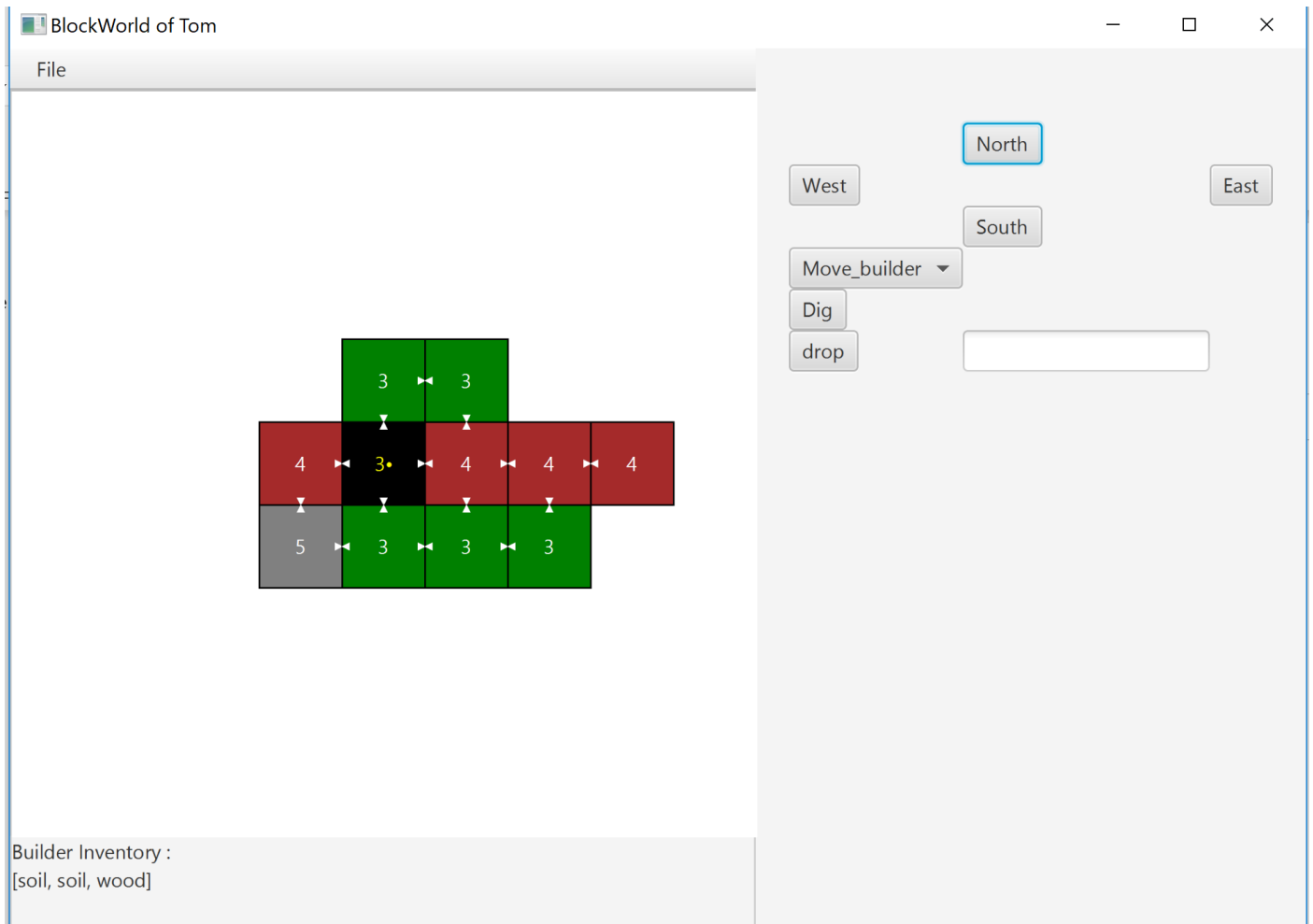


Figure 5: When after map has been successfully loaded

Once the map has been successfully loaded, the GUI will update and enable all actions buttons (on the right-hand side), and the map will render on the left-hand side. The builder's current inventory will also be displayed at bottom left hand corner.

Action Buttons in GUI:

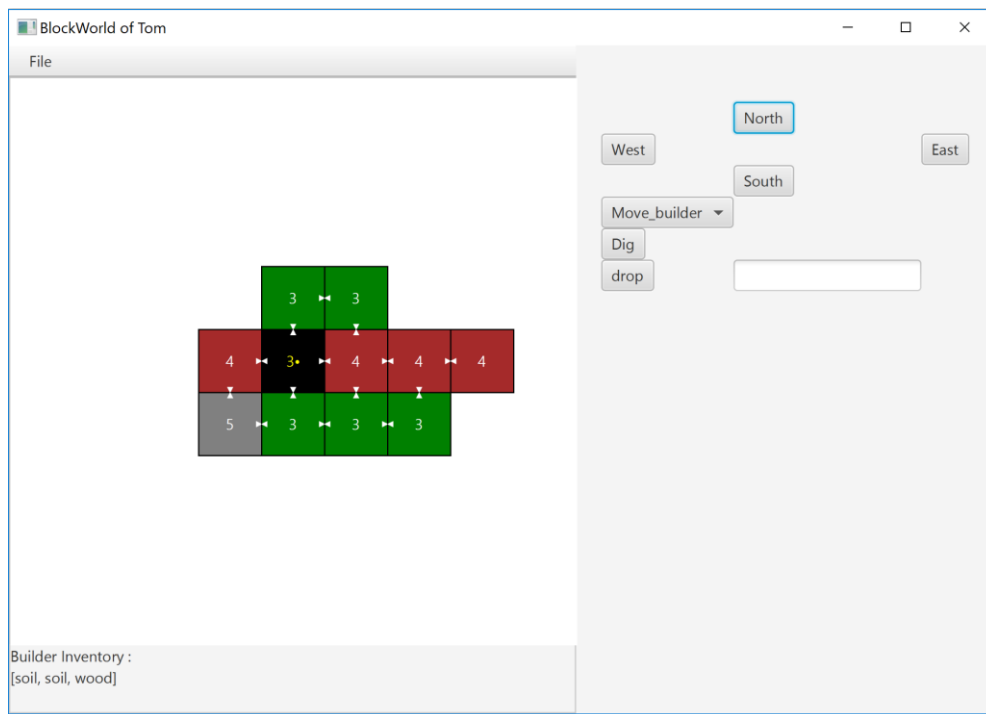


Figure 6: Builder moving(before)

The builder is always placed in the centre of the Map display area (represented by the yellow dot). If the choice chosen in the choice box is "Move_builder". By clicking on any of the direction buttons (north, south, east and west) will move all the tiles accordingly. In this example by clicking on "north" all the tiles were moved down by 1. This can be seen in Figure 6 and 6.1 for the before and after effects.

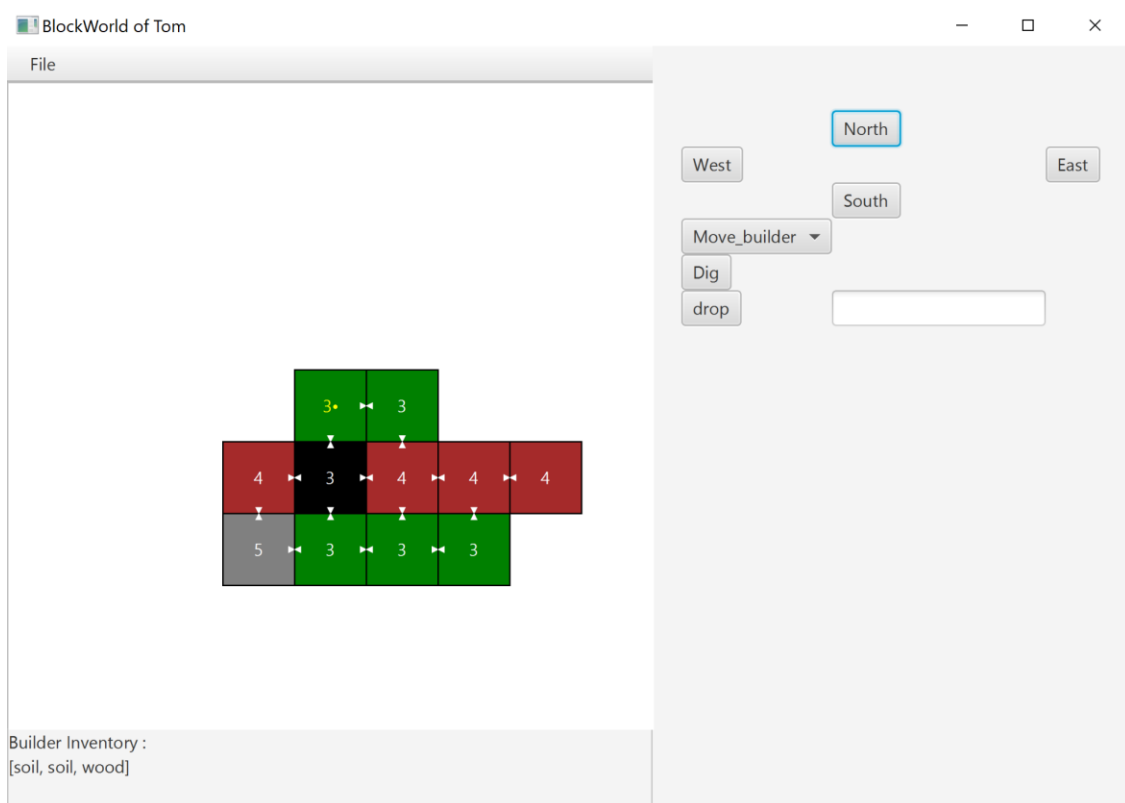


Figure 6.1: Builder moving(after)

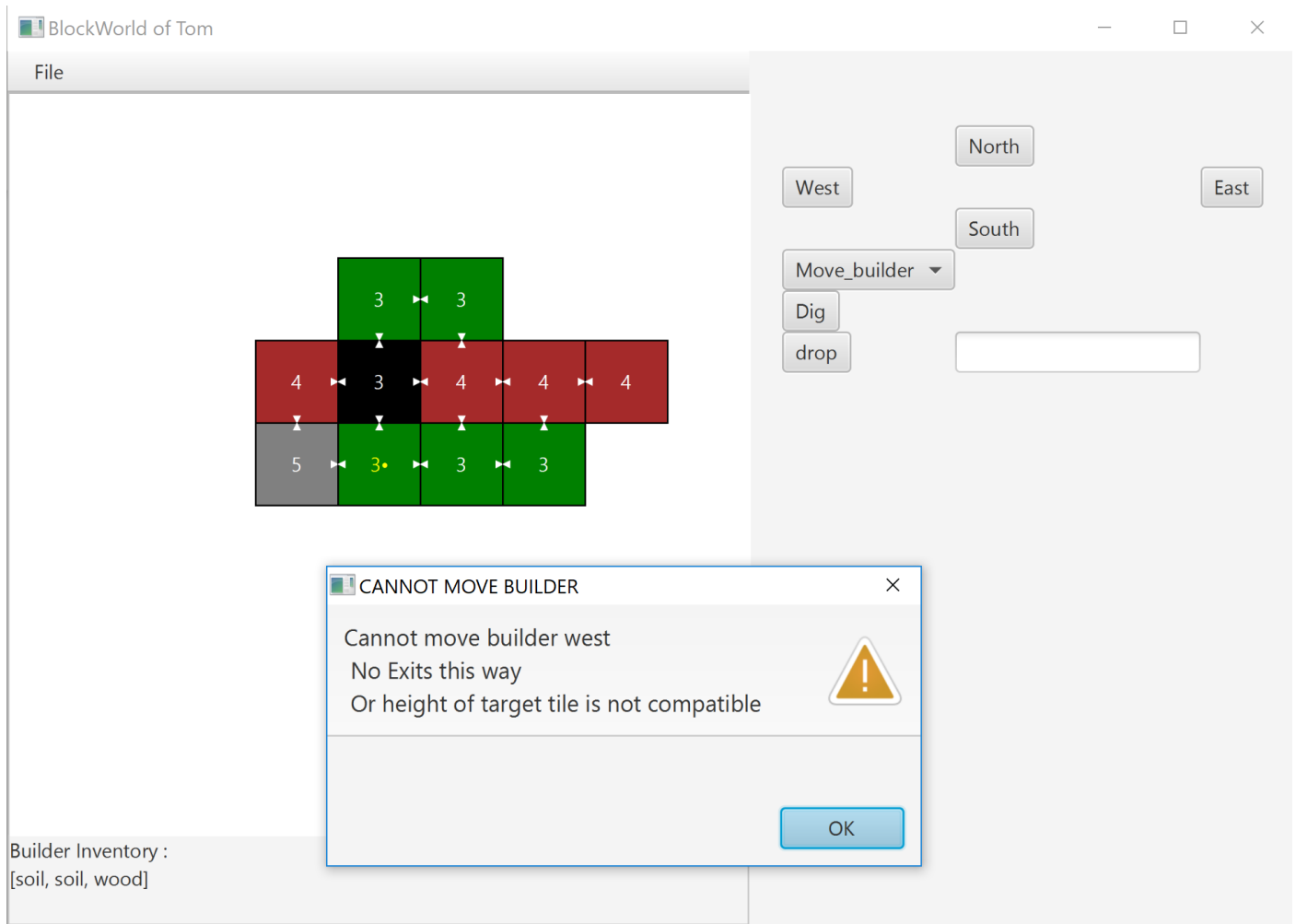


Figure 7: Target tile is too high when moving builder

Figure 7 shows that builder cannot move west, as the target tile's height is not compatible, an alert box will show up indicating the user that this action is invalid.

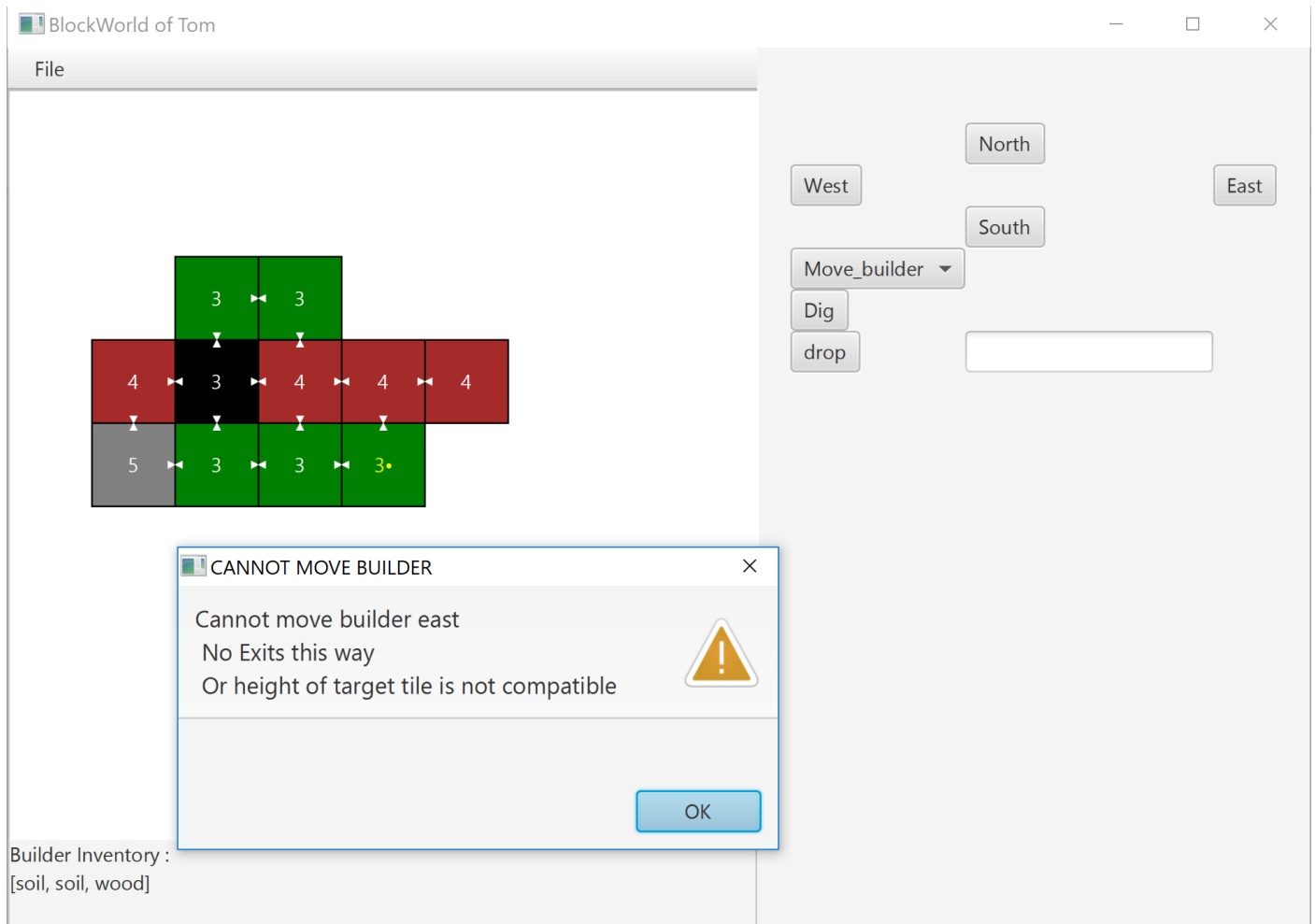


Figure 8: current Tile does not have an exit in the specified direction (move builder)

Figure 8 shows that builder cannot move in east, as there does not exist an exit from the current tile to that direction. An alert box will show up indicating the user that this action cannot be applied.

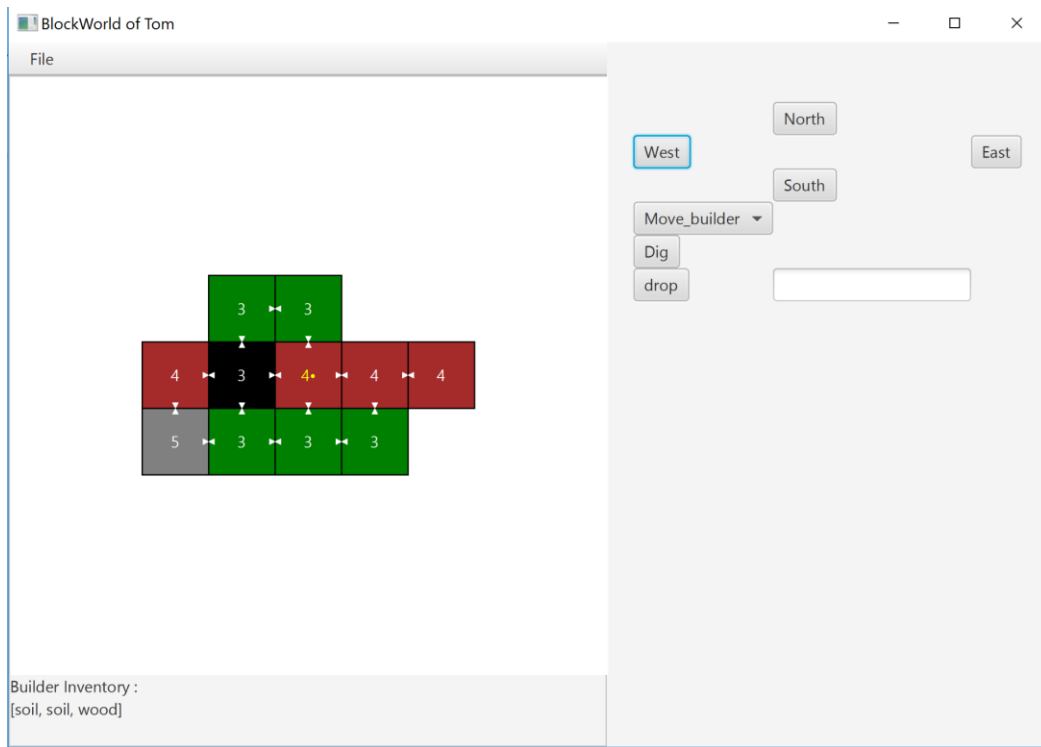


Figure 9: Moved block(before)

Figure 9 shows that when the “Move block” is chosen in the choice box and a direction button is clicked, the top block on the current tile is moved to the target tile. **In this case, north is clicked, therefore the current tile’s top block is move to the tile that is north of it (refer to Figure 9.1 for the after effects).**

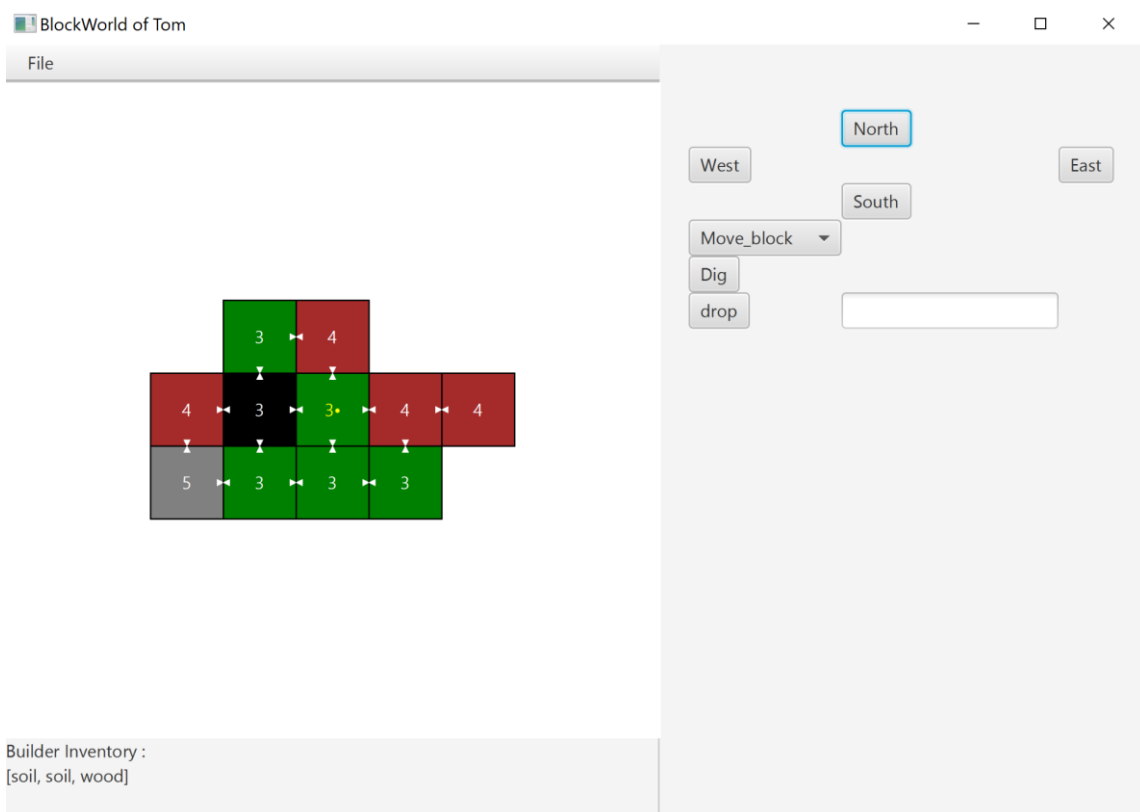


Figure 9.1: Move block(after)

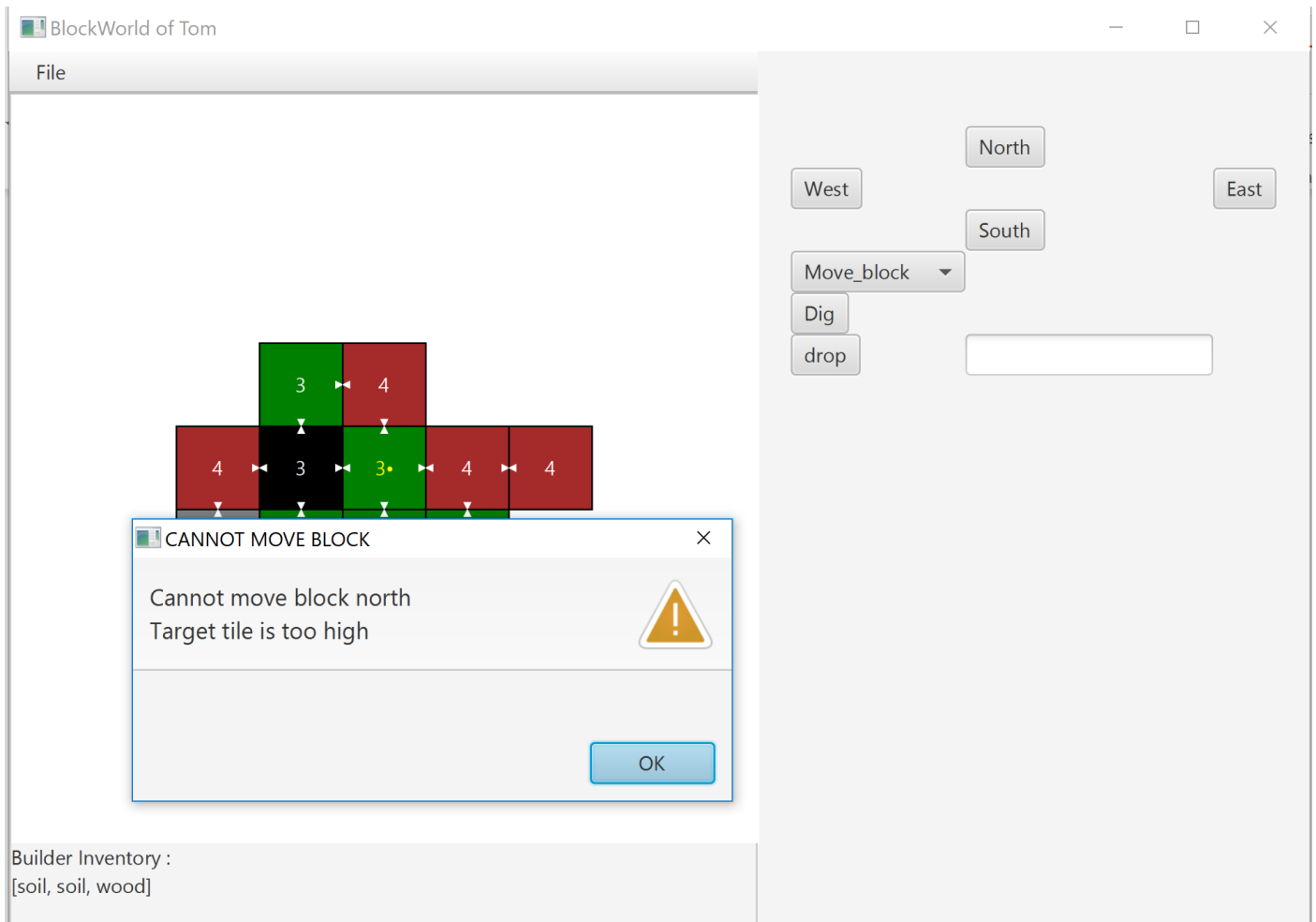


Figure 10: Target block is too high when moving block

Figure 10 shows that the action move block cannot be done, as target tile is too high. An alert box will show up indicating the user that this action cannot be applied.

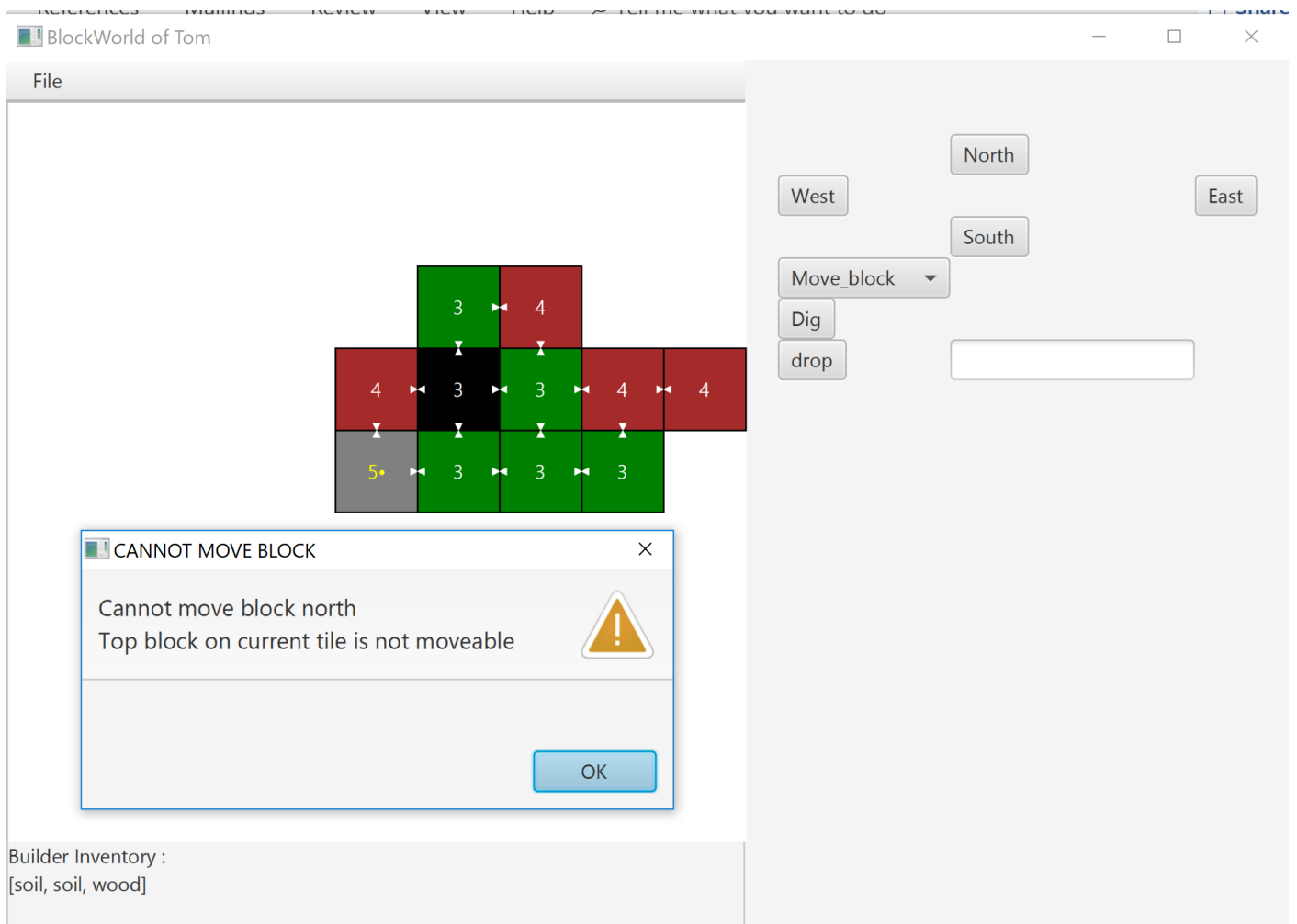


Figure 11: Current block is not moveable when moving block

Figure 11 shows that the action move block cannot be done, as the current tile's top block is not moveable. An alert box will show up indicating the user that this action cannot be applied.

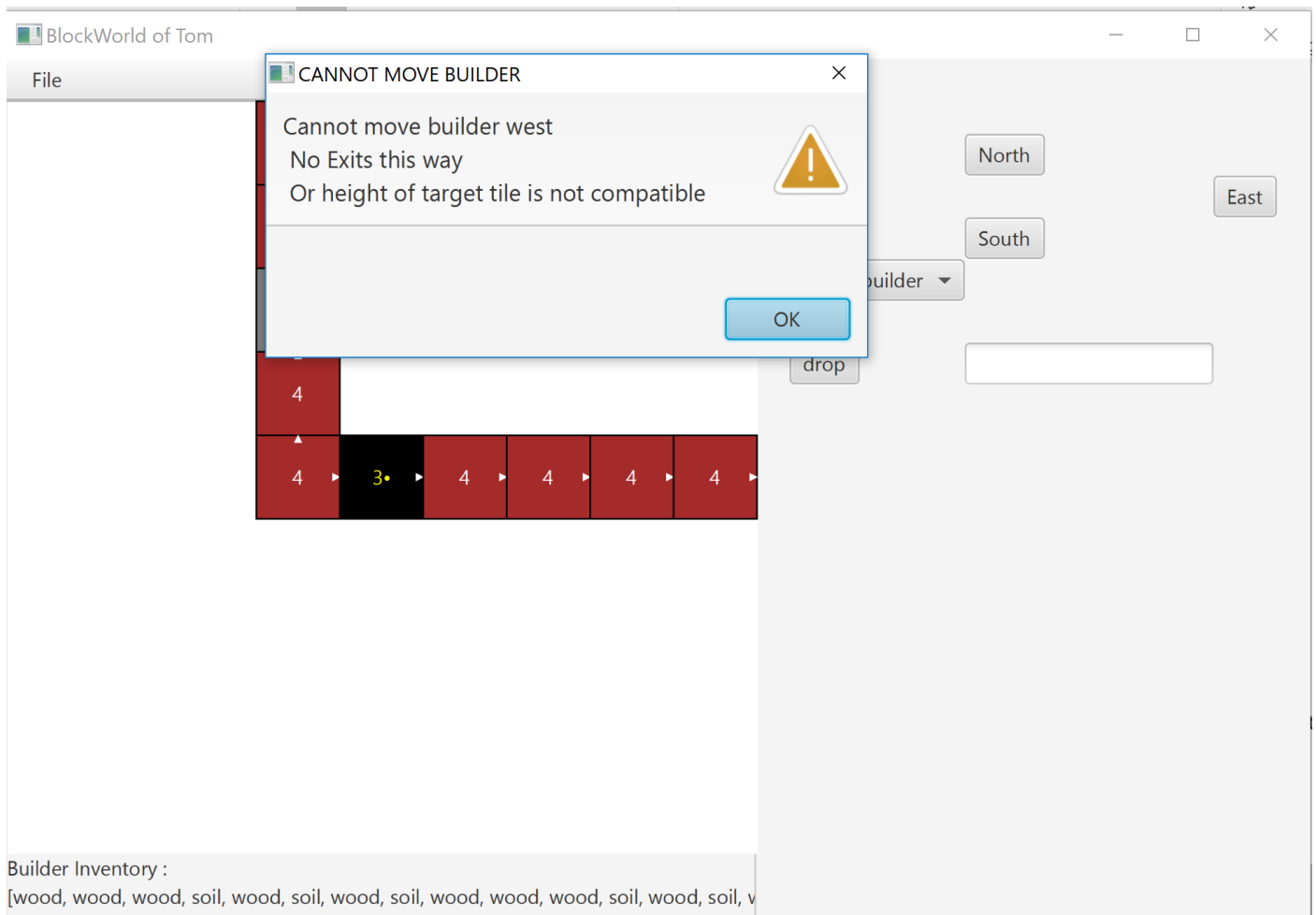


Figure 12: no exits from current tile when moving block

Figure 12 shows that the action move block cannot be done, as there does not exist an exit between the current tile and target tile. An alert box will show up indicating the user that this action cannot be applied.

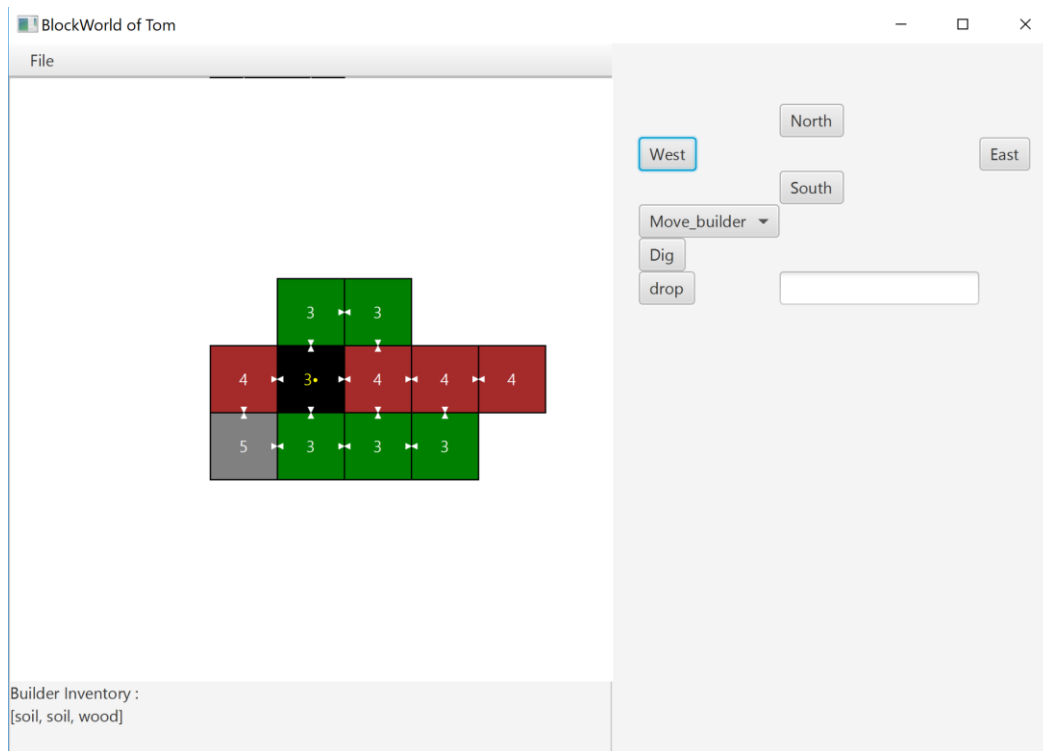


Figure 13: Dig(before)

Figure 13, Figure 14 shows the before and after effect of Dig. By Pressing the Dig button, it will dig on current tile and if the block can be carried, it will add it to builder's inventory. The number indicating the total number of blocks on the current tile will also reduce accordingly, and the colour shown will also change as the top block has changed.

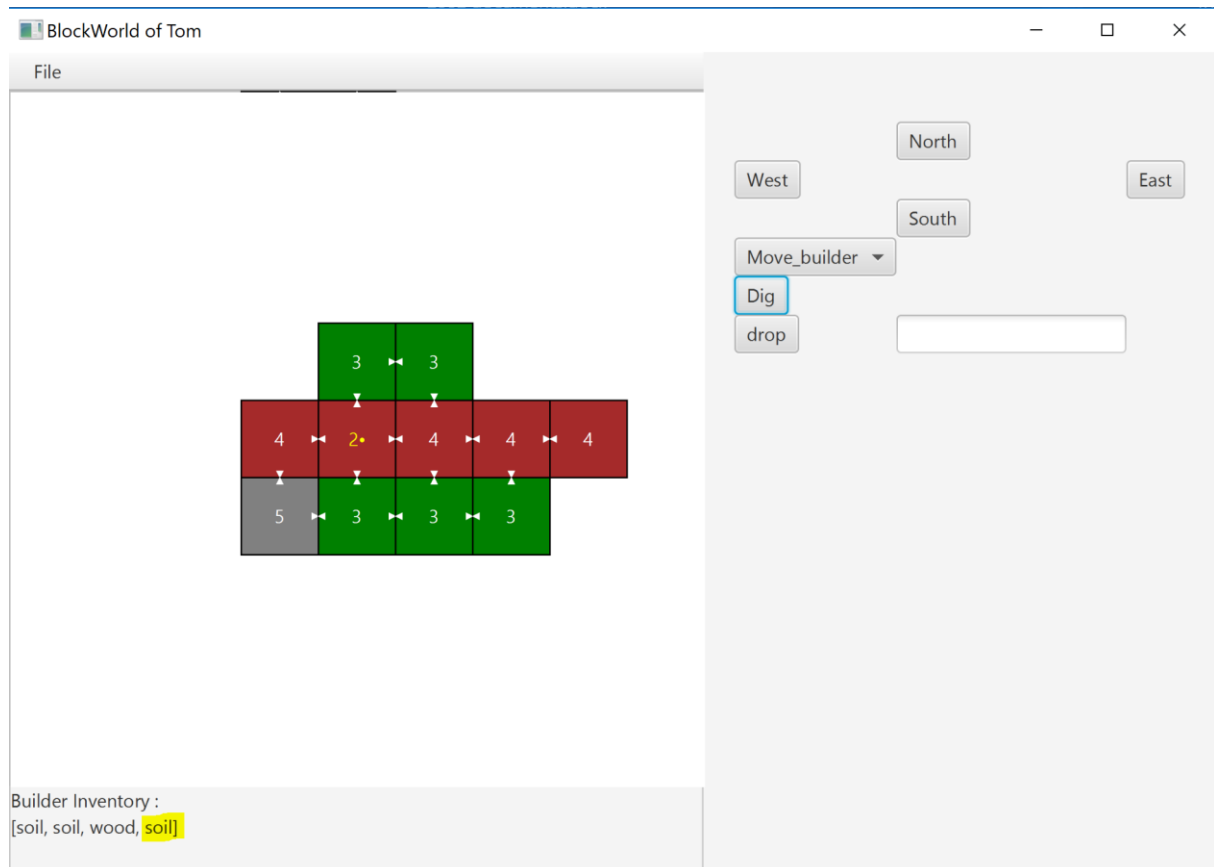


Figure 14: Dig(after)

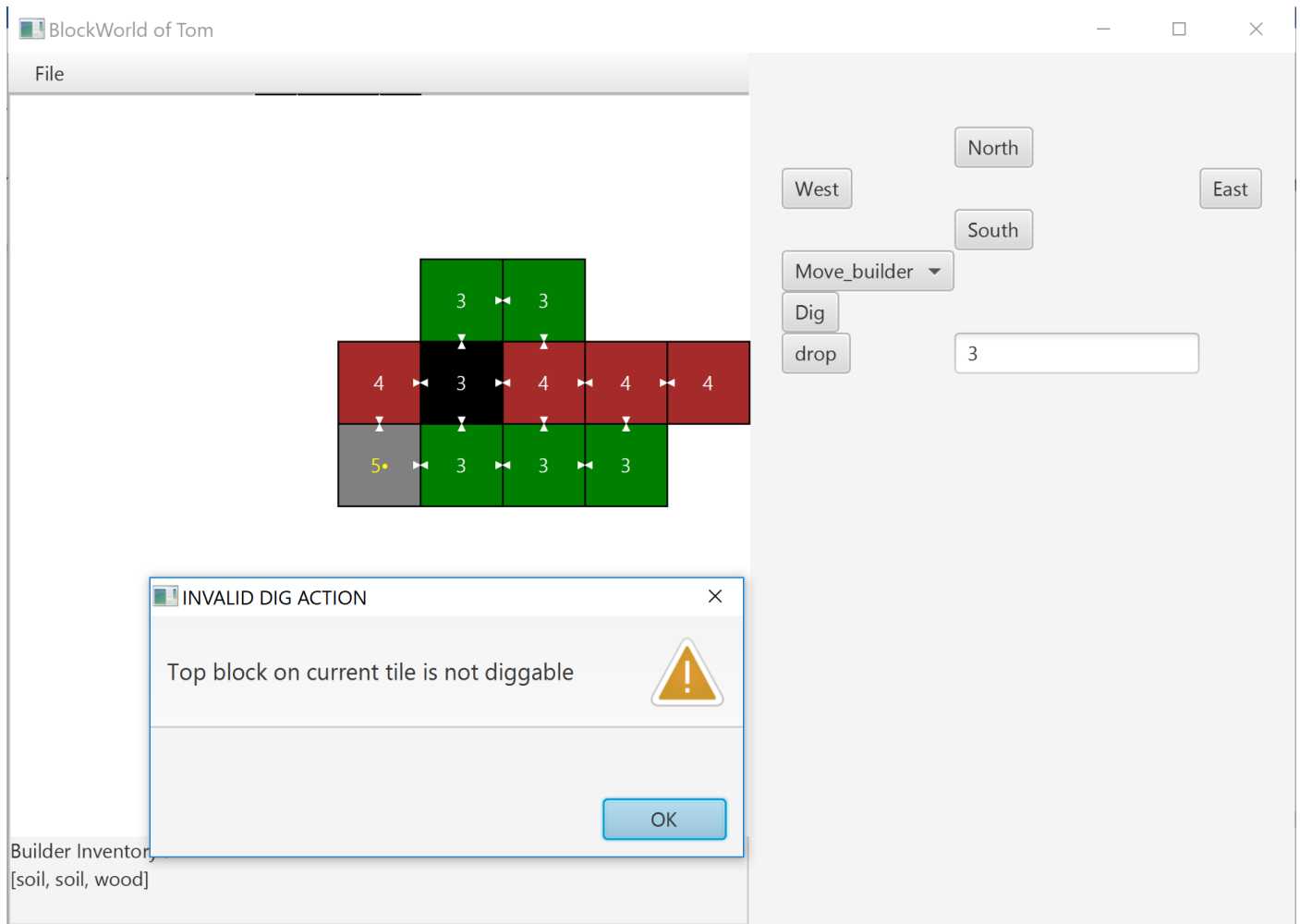


Figure 15: Top block on current tile is not diggable

Figure 15 shows that Dig cannot be performed as the Top block is not diggable. An alert box will show up accordingly, indicating to the user that this action cannot be applied.

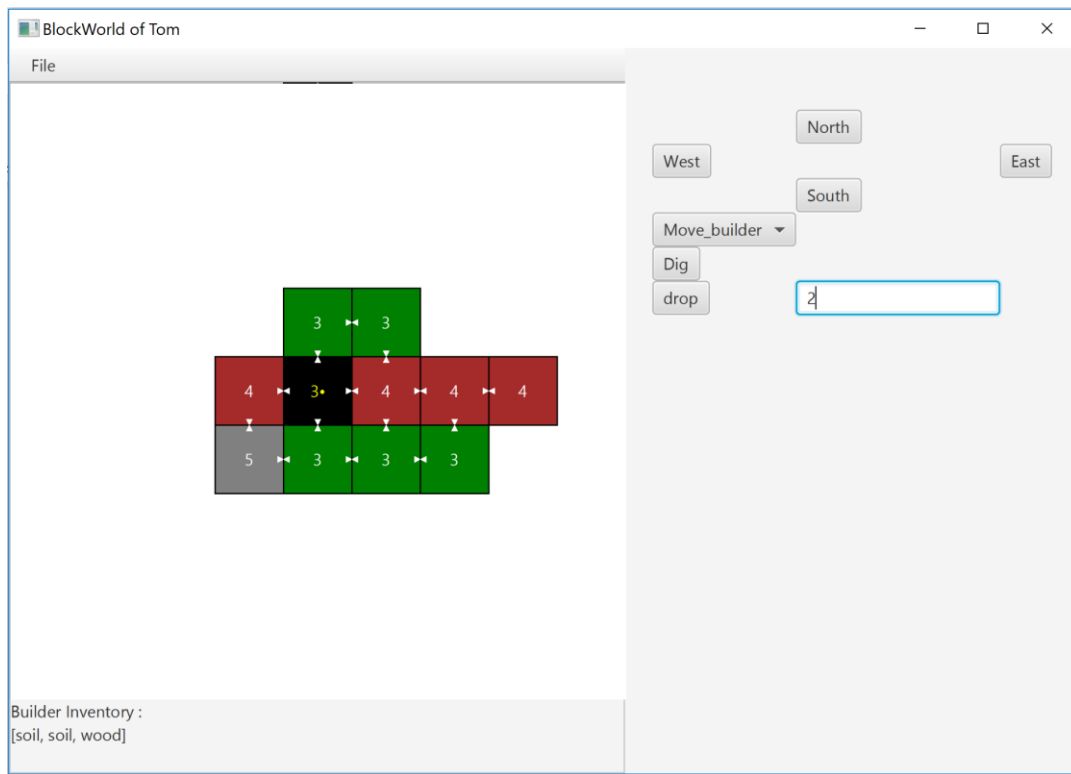


Figure 16: Drop (before)

Figure 16 and 16.1 shows how the index can be entered for drop action. When Drop button is pressed, If the entered text is valid, the block will be dropped, display of the builder's inventory (bottom left) will be updated. The number indicating the total number of numbers on the current tile will also increase accordingly, and the colour shown will also change as the top block has changed.

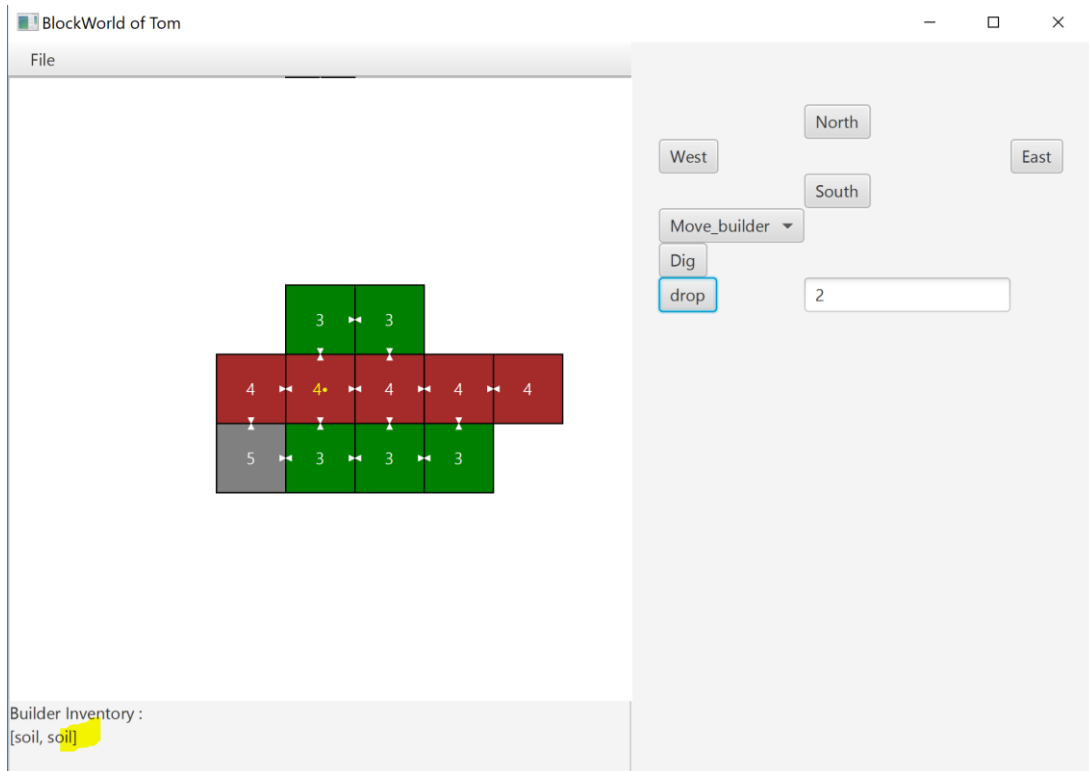


Figure 16.1: Drop (after)

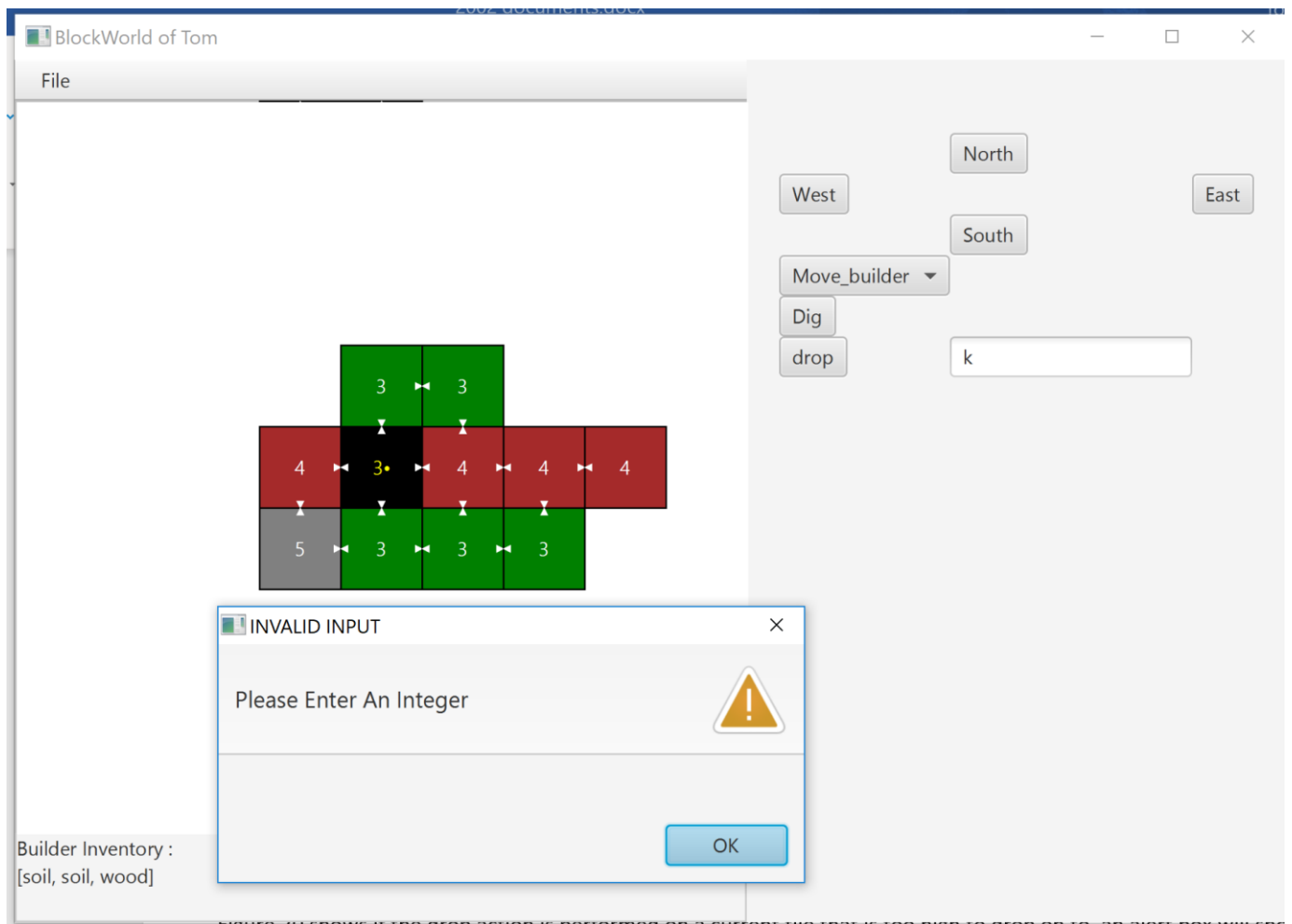


Figure 17: invalid Drop action with illegal entered text

Figure 17 shows if the index entered is not a whole number. An alert box will show up accordingly, indicating to the user that this action cannot be applied.

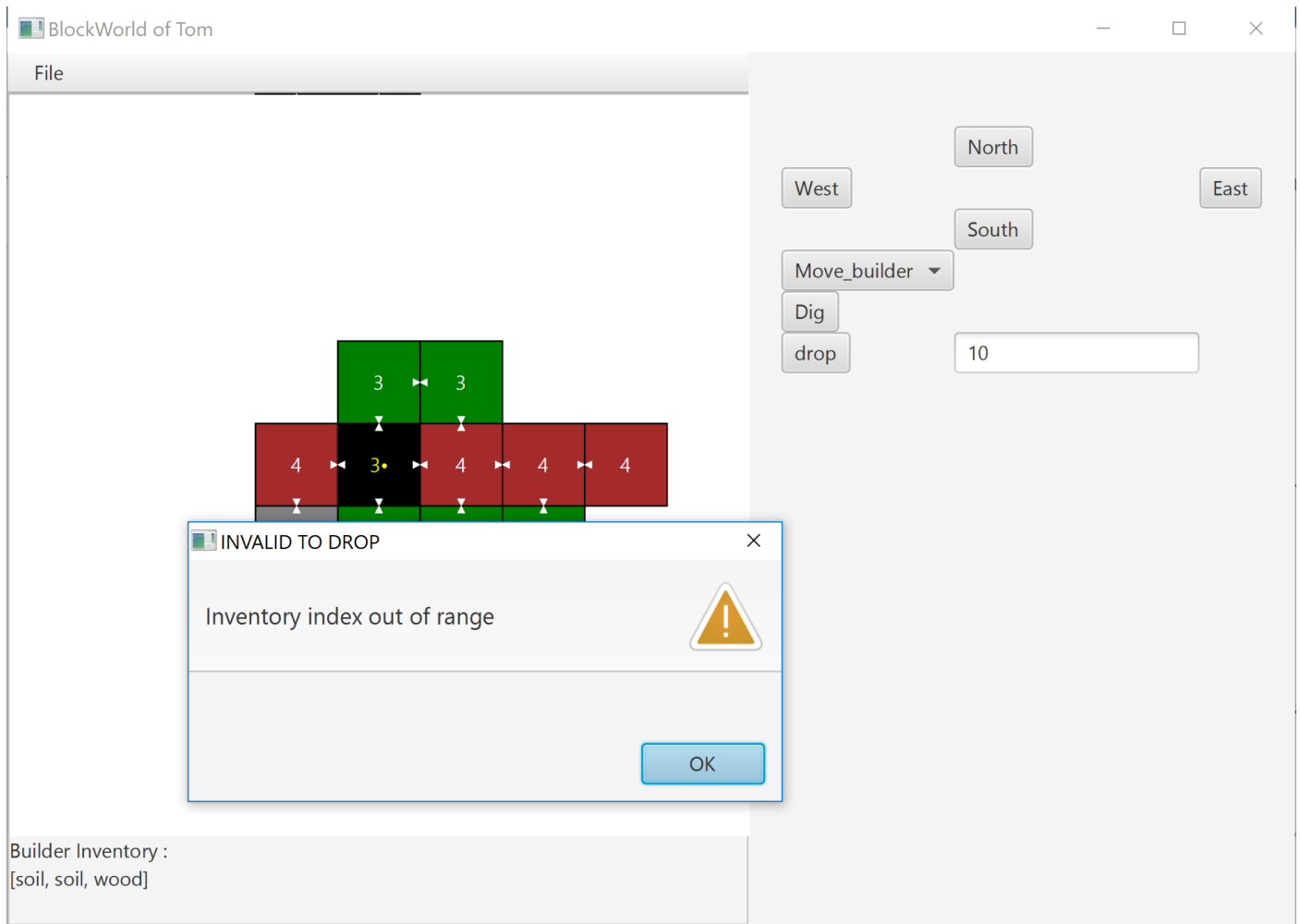


Figure 18: invalid Drop action with entered text out of range

Figure 18 shows if the index entered out of range. An alert box will show up accordingly, indicating to the user that this action cannot be applied.

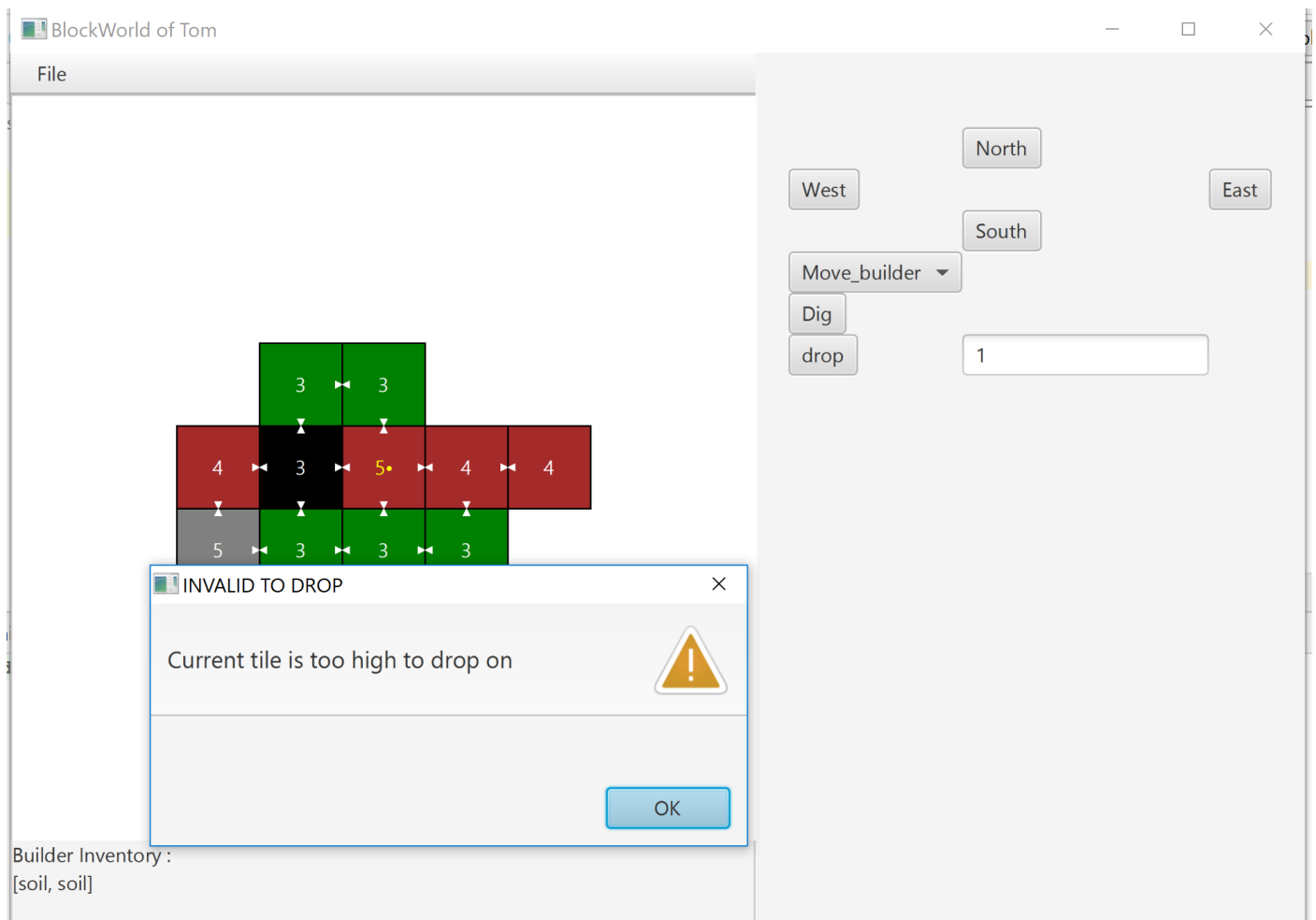


Figure 19: invalid Drop action as current tile is too high

Figure 19 shows if the drop action is performed on a current tile that is too high to drop on to, an alert box will show up accordingly, indicating to the user that this action cannot be applied.

Save Map:

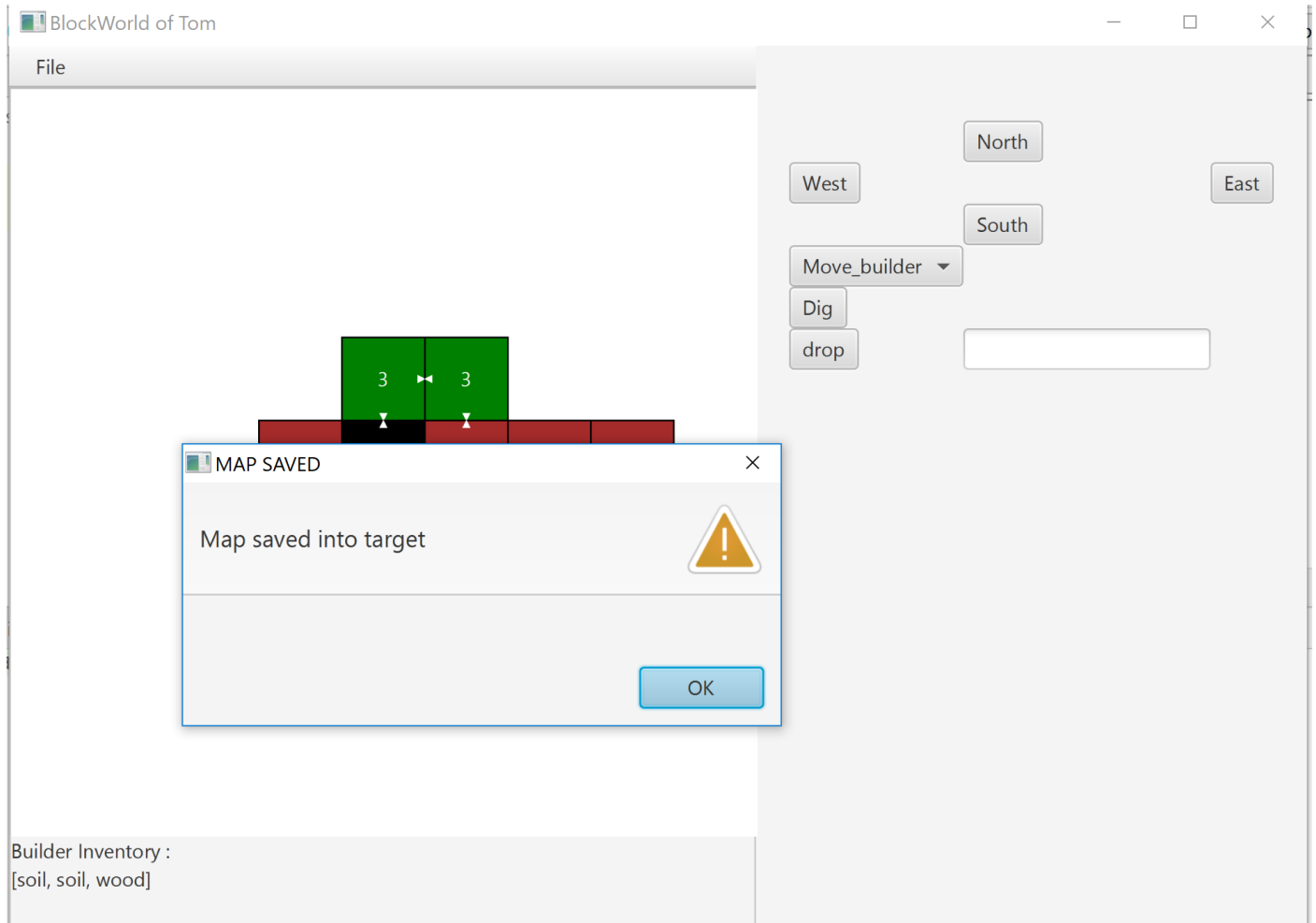


Figure 20: successful save map

Figure 20 shows if the file chosen is appropriate, then an alert box will be shown to notify the user that the map is saved successfully.

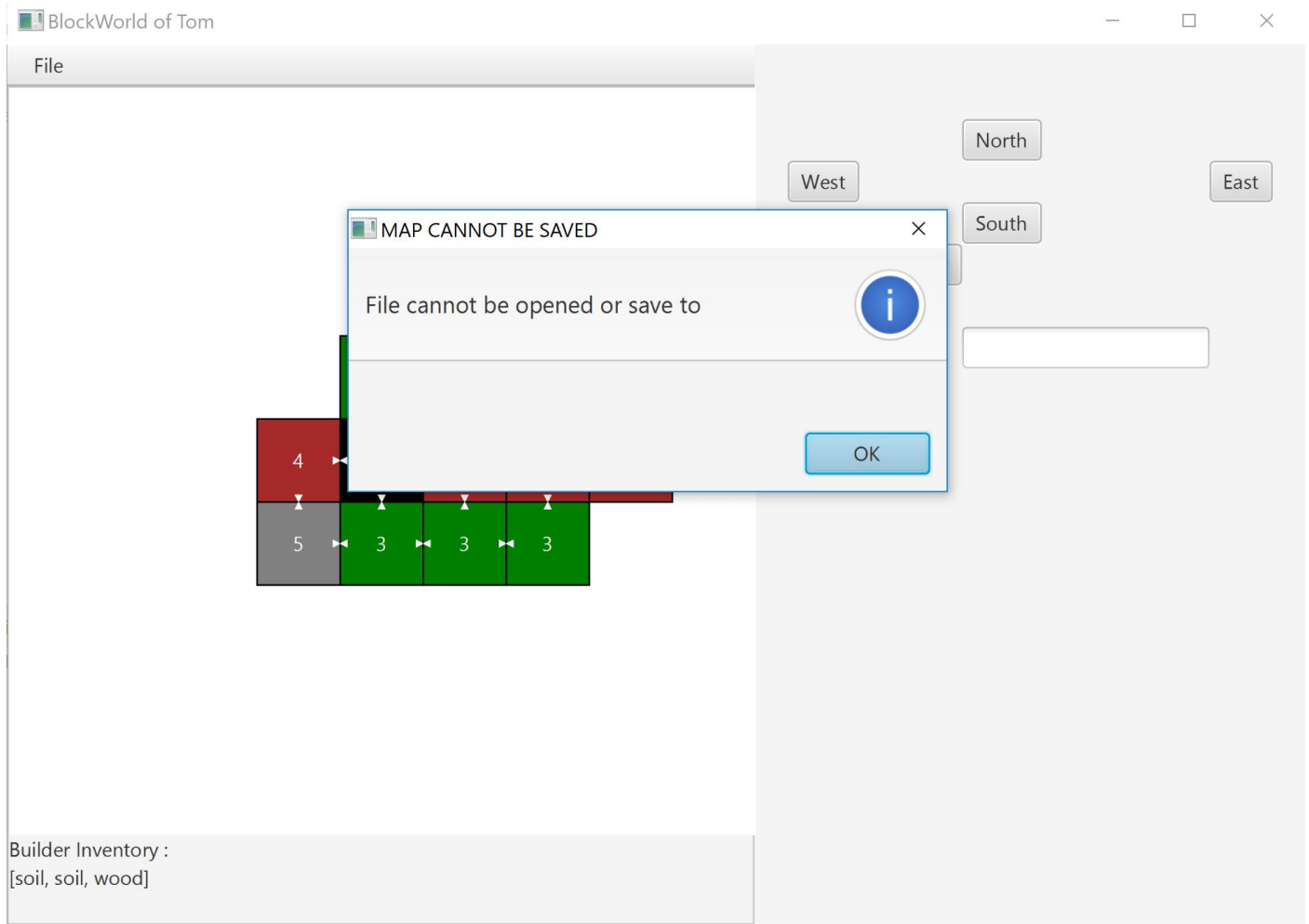


Figure 21: map cannot be saved

Figure 21 shows if the file chosen to save the map into cannot be opened or saved into, then an alert box will be shown to notify the user that the attempt for save map is not successful.

