

Response to Reviewer Comments

Manuscript Title:

Research on 3D defect information management of drainage pipeline based on BIM

Manuscript #: buildings-1563892

General:

The authors sincerely thank the editor and reviewer for their careful review of our manuscript and for their helpful comments to improve our manuscript. We have considered all the reviews carefully and have revised our manuscript accordingly. Specific responses are briefly summarized under each comment below. We hope that we have addressed most, if not all, of the comments sufficiently. Thank you for considering our revised manuscript for publication in Buildings.

Comments from reviewers:

Reply to reviewer #2

Dear reviewer:

Thank you very much for your valuable questions and advices to improve our manuscript. We have studied your comments carefully and tried our best to revise the paper according to the comments. Specific responses are briefly summarized under each comment below. We hope that we have addressed most, if not all, of the comments sufficiently. Thank you for considering our revised manuscript for publication in Buildings.

Best regards!

Yours sincerely,

Niannian Wang

1. In page 4, The depth image is a set of Z-coordinate values of each pixel of the image, In millimeters. I think “in millimeters”

Author's Response:

Thank you very much for your comment. We have made corresponding modifications on page 4 of the manuscript as follows:

“The depth image is a set of Z-coordinate values of each pixel of the image, in

millimeters.”

2. In page 11, “The distance threshold D is set to 2 for data denoising”. Unit must be added 2 mm or 2 cm...

Author's Response:

Thank you very much for your comment. We have made the following modifications on page 11 of the manuscript:

“Firstly, statistical filtering algorithm is used to denoise the acquired point cloud data. The distance threshold D is set to **2mm** for data denoising^[15]. ”

3. In page 14, The minimum LOD level for the pipeline model is LOD100. It should be “The minimum Level of Detail (LOD) for the pipeline ”.

Author's Response:

Thank you very much for your advice. We have made the following modification on page 14 of the manuscript:

“ The minimum **Level of Detail (LOD)** for the pipeline model is LOD 100. ”

4. In page 14, The caption of Figure 12 should be modified.

Author's Response:

Thank you very much for your advice. We have modified the caption of Figure 12 as follows:



Figure 12. **BIM model combined with point cloud data**

5. In page 17, “The research contributions are as follows: (1) based on the pipeline surface damage”. It should be (1) Based on the.....

Author's Response:

Thank you very much for your comment. The corresponding changes we made on page 17 are as follows:

“The research contributions are as follows: (1) **Based** on the pipeline surface damage, a method to quantify the volume and surface area of mesh reconstruction of defective point cloud of drainage pipeline is proposed, which is convenient for the later repair of the pipeline. ”