

**Suburban streets:** Possible course of suburban streets after the 1080 construction of the city walls. Digitised on basis of building complex orientations and visible evidence on the IKONOS image.

**Early streets:** a few of the likely streets of the early city in the SW – digitised using the IKONOS image for location but incorporating ideas based on the AP data in the area. Primarily digitised to explore the early city boundary.

**Early city boundary:** putative line of earlier city boundary, digitised from IKONOS image but incorporating ideas based on the AP data.

**Hormuzfarra canal:** possible line of a major canal lying to the west of city. Line is very tentative, and largely based on soil marks in the ploughed fields in the area (digitised from the IKONOS image).

**Main east-west road:** line of the principal east-west street through the city and western suburbs. Line clearly visible on the IKONOS and AP images (digitised from the IKONOS).

**Streets:** a small sample area of streets and alleys digitised within the NW corner of Sultan Kala, to explore some of the complexity of the layout. Digitised from the IKONOS image but heavily supported on the basis of conjecture from the AP images, including the contrast stretched versions.

**gardens (se):** broad outline of open spaces in the SE quarter of Sultan Kala, forming enclosed/bounded external spaces, possibly indicating areas of formal gardens, orchards, and/or fields within the Islamic city. Digitised from IKONOS image.

**open spaces:** test area of digitising open spaces (courtyards) and possible gardens, etc, within the NW quarter of Sultan Kala. Digitised from the IKONOS image but with reference to (interpreted from) the AP data (especially AP\_Ceri\_joined).

**Suburban religious areas:** broad boundaries for areas of suburban religious activity (burials, mausolea, shrines, etc) to the west of Sultan Kala. Digitised from IKONOS image.

**Suburban elite buildings:** the main elite buildings (including the Greater and Lesser Kyz Kalas) to the west of Sultan Kala. Digitised from IKONOS image.

**Areas of suburban building:** highly conjectural broad zones of suburban building, based on the IKONOS and (where coverage exists) the AP data. Digitised positions from IKONOS image.

**Caravanserai (suburban):** possible caravanserai structures to the west of Sultan Kala. Those to the north west of the area are fairly certain; those to the east and south are more conjectural (based on large courtyards, overall scale and structure of surrounding landscape). A digitised position from IKONOS image, but where AP coverage exists, this data was also used in interpreting possible structures.

**Potters Quarter:** broad zone of industrial activity (mainly ceramic production, but including other industries) commonly referred to as the Potters Quarter. Digitised from IKONOS image.

**Elite garden features:** highly speculative digitisation of putative garden features in the landscape surrounding the Kyz Kalas. Based upon soil marks observed in the IKONOS image, and features observed in the AP data (which only covers part of the area). Digitised from IKONOS image.

**Elite gardens:** broad area of possible elite garden space surrounding the Kyz Kalas (see also Layer Elite garden features). Digitised from IKONOS image.

**Unbuilt suburban space:** a broad polygon covering the whole of the W suburban area (south of the main east-west road), to underlay all the other suburban layers to show through as unbuilt space (possible areas of pasture, horticulture, orchards, etc). Digitised from IKONOS image.

**madjan:** course of Madjān canal within the walled area of Sultan Kala and its suburbs. Line digitised from IKONOS image but with reference to AP data. Some problems in distinguishing the line of the canal from adjacent road and or buildings in different lighting conditions. Will need to be revised with careful re-examination of each sector during building/open space digitisation programme.

**Dense area built space:** broad polygon showing the most heavily built up areas of the city: extending either side of the Madjān canal, beyond the boundaries of the later walled core to north and south, and extended east and west along major streets. Digitised from IKONOS image.

**SK\_walkover\_15th:** pottery surface collection survey data. Plot of distribution of 15th century material.

**SK\_walkover\_14th:** pottery surface collection survey data. Plot of distribution of 14th century material.

**SK\_walkover\_13th:** pottery surface collection survey data. Plot of distribution of 13th century material.

**SK\_walkover\_9\_10th:** pottery surface collection survey data. Plot of distribution of 9th & 10th century material.

**SK defences:** position of curtain walls and towers for the main city defences of Sultan Kala. Each curtain wall and tower is a separate polygon, with its number in the field DRAWING. In places the walls are so eroded that details of towers and/or curtain walls are difficult to see (either in the images or on the ground): in these cases, the conjectured lines/position appear on the Layer Eroded defences. Digitised from IKONOS image, but with reference to the AP data in determining tower positions.

**Eroded defences:** in some places interval towers and stretches of curtain wall are so eroded that their exact position is uncertain. Sometimes the position of towers can be inferred from erosion mounds (these are indicated in the digitised layer), while in others areas the distance between observed towers suggests that more towers existed, although their specific positions cannot be determined (and although reflecting in the numbering sequence possible positions are not marked). Where possible, each stretch of curtain wall and tower is a separate polygon, with its number in the field DRAWING. Digitised from IKONOS image.

**northern suburb:** position of curtain walls and towers for the northern suburb of Sultan Kala. These are not individually numbered. Digitised from IKONOS image, but with reference to the AP data in determining tower positions.

**southern suburb:** position of curtain walls and towers for the southern suburb of Sultan Kala. These are not individually numbered. Digitised from IKONOS image, but with reference to the AP data in determining tower positions.

**Russian\_map:** a geo-rectified portion of a Russian map published in 1954/56 at a scale of 1:10,000. The contours are reasonably accurate, although ground truthing suggest that there are problems with these in some places.

**AP\_Ceri\_cut\_contrasted:** Russian 1970s aerial photographs joined into a geo-rectified photo-mosaic and contrast stretched to accentuate features, by Ceri Rutter.

**AP\_Ceri\_Joined:** Russian 1970s aerial photographs joined into a geo-rectified photo-mosaic by Ceri Rutter.

**AP\_Dom\_Joined and enhanced:** Russian 1970s aerial photographs joined into a geo-rectified photo-mosaic by Dominic Powlesland, who developed the approach of contrast stretching the images to accentuate features for plotting.

**AP\_Dom\_Joined:** Russian 1970s aerial photographs joined into a geo-rectified photo-mosaic by Dominic Powlesland. This was the first attempt to handle this less than perfect data set: the image was relatively rapidly processed, and it was not intended to be accurate over the whole space, but rather to demonstrate the potential of material for further study.

**ikonos:** a clipped version of an IKONOS satellite image taken in 2000 for the project. The full extent of the imagery is 10 x 10kms is available in Layer erdas10. The image was geo-rectified against differential GPS base stations.